Murray, Robert Sex: M

Consult Notes (continued)

Consults by John Anthony Kline Jr., MD at 01/27/19 0559 (continued)

Consults by Nada El Andary, MD at 01/26/19 0830

Author: Nada El Andary, MD

Service: Neurology (GWVNEU) Date of Service: 01/26/19 0830 Author Type: Physician

Filed: 01/27/19 1530

Status: Signed

Editor: Nada El Andary, MD (Physician)

Related Notes: Original Note by Laura Flerke, PA-C (Physician Assistant - Certified) filed at 01/26/19 0922

Consult Orders

1. Neurology Consult IP [503585662] ordered by Stephanie Elizabeth Dosiak, PA-C at 01/26/19 0601

CONSULT - Neurology GWV-GEISINGER WYOMING VALLEY 1000 East Mountain Blvd Wilkes Barre PA 18711

Name: Robert Murray MRN: 5647010 Location: GWV ICU-22/A Date: 1/26/2019 Time: 8:30 AM

Date and Time Neurology Team Notified of Consult: 1/26/2019 at 0601

Person Providing History: patient

REQUESTING SERVICE: Neurosurgery REASON FOR CONSULT: Cerebellar stroke

Presenting Problem: balance difficulties, dizziness, N/V

HPI: 48 year old male smoker with HTN and GERD referred to Neurology for cerebellar stroke, Thursday evening, patient had sudden onset balance difficulties with vomiting, headache and dizziness. He presented to Regional hospital and was found to have a cerebellar stroke and ?vertebral artery dissection and was transferred to GWV. Patient denies neck pain, neck injury, heavy lifting. No history of a stroke or heart disease; not on ASA. Denies weakness, numbness, double vision, trouble swallowing. Although he notes sensation difference on exam (L side reduced). Says his vision is blurry and he's having trouble focusing. His dizziness and nausea have improved, but he hasn't been out of bed to know if his balance has improved. He still has the same headache he's had for 2 days.

PAST MEDICAL HISTORY:

Past Medical History:

Diagnosis

Date

- GERD (gastroesophageal reflux disease)
- HTN (hypertension)
- · Lumbar disc disorder

PAST SURGICAL HISTORY:

Past Surgical History:

Procedure Laterality Date

APPENDECTOMY W/OTHER PROCEDURE

 COLONOSCOPY FLEXIBLE PROXIMAL DIAGNOSTIC Performed by John Anthony Boger, MD at ENDOSCOPY GWV

8/24/2015

ESOPHAGOGASTRODUODENOSCOPY (EGD), FLEXIBLE, TRANSORAL, ENDOSCOPIC ULTRASOUND

Performed by Yakub I Khan, MD at ENDOSCOPY GWV

5/11/2015

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Consult Notes (continued)

Consults by Carrie A Williams, RPh at 01/27/19 1531 (continued)

Carrie A Williams, RPh Pharmacist GWV-GEISINGER WYOMING VALLEY 01/27/19 1532

Consults signed by John Anthony Kline Jr., MD at 03/17/19 0453

Author: John Anthony Kline Jr., MD

Service: ---

Date of Service: 01/27/19 0559

Author Type: Physician

Status: Signed

Editor: John Anthony Kline Jr., MD (Physician)

CONSULTATION REQUEST
GEISINGER WYOMING VALLEY MEDICAL CENTER
1000 East Mountain Boulevard
Wilkes-Barre, Pennsylvania 18711

MURRAY, ROBERT MR #5647010 DOB: 12/05/1970 Location: IC22

Filed: 03/17/19 0453

TO DEPT: REHABILITATION MEDICINE

FROM DEPT: SIGNED:

DATE: 01/27/2019

PROBLEM:

PLEASE EVALUATE PATIENT WITH SPECIFIC ATTENTION TO:

CONSULTATION REPORT

REASON FOR CONSULTATION: We are asked to see the patient by Dr. Schirmer secondary to deficits in activities of daily living as well as mobility and need of rehabilitative intervention.

CHIEF COMPLAINT: Gait difficulty secondary to that of generalized weakness as well that of poor balance.

HISTORY OF PRESENT ILLNESS: Robert Murray is a 48-year-old, white male, who at this time, does demonstrate chronic medical conditions significant for high blood pressure, gastroesophageal reflux disorder, as well as tobacco abuse. At this time, he initially presented to the Regional Hospital secondary to that of poor balance, nausea, some emetic episodes and simply feeling out of it. Patient underwent that of a diagnostic workup which revealed evidence of a cerebellar stroke with left vertebral arterial dissection. At that time, was transferred to Geisinger Wyoming Valley Hospital where he was admitted on the service of Dr. Schirmer and was placed in the Intensive Care



Consult Notes (continued)

Consults signed by John Anthony Kline Jr., MD at 03/17/19 0453 (continued)

Unit for monitoring. Secondary to continued deficits in activities of daily living, as well as mobility, physiatric consultation subsequently then had been obtained.

PAST MEDICAL/PAST SURGICAL HISTORY: Significant for that of hypertension, hypertensive cardiovascular disease, chronic intractable low back pain, lumbar disk disease, gastroesophageal reflux disorder, appendectomy, colonoscopy, esophagogastroduodenoscopy.

MEDICATIONS: Extensive as per chart.

ALLERGIES: The patient is not allergic to medication of which he is aware.

PSYCHOSOCIAL HISTORY: At this time, he does admit to utilizing tobacco. States he smokes approximately a pack of cigarettes a day and has done so for 20 or more years. Does admit to utilization of alcohol, drinking approximately 3-5 beers a day approximately 5 times per week. Previously was independent in activities of daily living as well as mobility without utilization of assistive device or adaptive equipment. Indicates that he had been a laborer working on trimming and cutting down trees.

FAMILY HISTORY: Noncontributory, essentially negative.

REVIEW OF SYSTEMS: At this time he does feel somewhat out of it, feels somewhat dizzy and off balance. Denies any chest pain, palpitations, nausea, vomiting, fever, chills, night sweats. All systems reviewed, negative except as previously stated above.

PHYSICAL EXAMINATION: Currently afebrile. Vital signs are stable. Temperature is 98.5 degrees Fahrenheit, pulse 59, respiratory rate 9, blood pressure is 117/79, with oxygen saturation being 96%. HEENT exam shows the head to be normocephalic, atraumatic, essentially unremarkable. Eyes: Extraocular motor is intact. Nose without rhinorrhea. Ears without drainage. Throat without exudate or erythema. Neck is supple. Lymphatic exam shows no cervical, inguinal adenopathy. Cardiovascular exam: Regular rate. No murmurs, rubs, gallops appreciated. Respiratory exam shows lungs to be clear to auscultation and percussion. No evidence of rales, rhonchi, or wheeze bilaterally. Extremity exam shows trace edema in both lower extremities. Dorsalis pedis, radial pulse 2+ bilaterally. Patient exhibits normal capillary refillable in both hands and both feet. Neurologic examination: He is alert and oriented x3. 3/3 in both immediate and 5-minute recall. Manual muscle testing 5/5 strength throughout. Does demonstrate some dysphasia about that of the right upper extremity. His right lower limb is handcuffed to the bed time, as is his left upper limb with that of a corrections officer at his bedside.

DATABASE: Multiple medical records reviewed both new and old of high complexity.

IMPRESSION:

- 1. Left cerebellar cerebrovascular insult.
- Possible left vertebral arterial dissection near the C4 vertebral body.
- 3. Tobacco abuse.
- 4. Mild degenerative osteoarthritic changes.

RECOMMENDATIONS:

- 1. At this time, provide extensive patient education and counseling.
- 2. At this time, engage in physical and occupational therapy. Currently at this time, continue to monitor his neurologic status for evidence of continued improvement or that of potential decompensation.



Consult Notes (continued)

Consults signed by John Anthony Kline Jr., MD at 03/17/19 0453 (continued)

3. Social service consultation will be obtained for discharge planning. At this time, he most likely will be able to return back to the institution with that of therapy provided there. Referral for inpatient rehabilitation will be placed as that of a backup in the event that he does require inpatient rehabilitation.

4. At this time he is scheduled for potential angiogram either today or Monday with that of vascular surgical consultation.

that of vascular surgical consus

John Anthony Kline Jr, MD

JAK/RR: D: 01/27/2019 05:59:24 T: 01/27/2019 06:58:03 Doc#: 1141755/823759380

H&P Notes

H&P by Clemens Maria Schirmer, MD at 01/26/19 0630

Author: Clemens Marla Schirmer, MD

Service: Neurosurgery (GWVSNU)

Author Type: Physician

Filed: 01/26/19 0936

Date of Service: 01/26/19 0630

Status: Signed

Editor: Clemens Maria Schirmer, MD (Physician)

Related Notes: Original Note by Stephanie Elizabeth Dosiak, PA-C (Physician Assistant - Certified) filed at 01/26/19 0656

HISTORY AND PHYSICAL EXAMINATION - Neurosurgery

GWV-GEISINGER WYOMING VALLEY 1000 East Mountain Blvd Wilkes Barre PA 18711

Name: Robert Murray MRN: 5647010 Location: GWV ICU-22/A Date: 1/26/2019 Time: 6:30 AM

PRESENTING PROBLEM: Cerebellar stroke

HPI:

Robert Murray is a 48 year old male with PMHx significant for HTN, GERD, tobacco abuse transferred to GWV from Regional hospital due to cerebellar stroke and left vertebral artery dissection. Patient states he began to feel "out of it" 10 PM Thursday night. Friday c/o global headache, dizziness, ataxia, N/V. Presented to regional hospital found to have cerebellar stroke and possible vertebral artery dissection. At this time patient continues with headache, mild nausea and dizziness. Denies any anticoagulant use.

HISTORY:

Past Medical History:

Past Medical History:

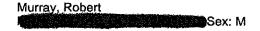
Diagnosis

Date

- GERD (gastroesophageal reflux disease)
- HTN (hypertension)
- Lumbar disc disorder

Past Surgical History:

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H&P Notes (continued)

H&P by Clemens Maria Schirmer, MD at 01/26/19 0630 (continued)

ASA 325 mg
Zofran
Tylenol and Dilaudid PRN
Neuro and Vitals Q1H
Most likely will plan for angiogram for further evaluation.
Please call with any questions or concerns, thank you.

Stephanie Elizabeth Dosiak, PA-C Physician Assistant - Certified GWV-GEISINGER WYOMING VALLEY 800-332-8901 01/26/19 0656

ATTENDING ADDENDUM: I have seen and evaluated this patient as scribed, and all films have been personally rendered on a PACS viewing station and reviewed by me. I have discussed the case and it's management with the resident/team as documented in the resident/team note on the day of service.

Robert Murray is a 48 year old male with Cerebellar stroke (HCC) [163.9] Vertebral artery dissection (HCC) [177.74]

Pt is s/p

Procedure name not found.

The patients neurological condition is with known deficit and unchanged and stable, the overall medical condition is also stable. The prognosis is fair.

On exam Blood pressure 128/89, pulse 63, temperature 37.2 °C (98.9 °F), resp. rate 12, height 1.829 m (6'), SpO2 99 %., see exam and findings above. NEURO: dysmetric

Recent laboratory:

No VERIFY components found

BASIC METAB PANEL, BMP

Coll Dt/Tm	Resulted	Value	Status
BUN (mg/dL)		*****	
1/26/19 8:23	A 1/26/19	13	F
CREATININE			
1/26/19 8:23	A 1/26/19	1.0	F
E GLOM FILT			
1/26/19 8:23		>60.0	F
SODIUM (mm			
1/26/19 8:23		140	F
POTASSIUM ((mmol/L)		

6

771	H&P Notes (continued)
H&P by Clemens Maria Schirmer,	, MD at 01/26/19 0630 (continued)
1/26/19 8:23A 1/26/19	3.6 F
CHLORIDE (mmol/L)	
1/26/19 8:23A 1/26/19	102 F
CO2 (mmol/L)	
1/26/19 8:23A 1/26/19	23 F
ANION GAP (mmol/L)	
1/26/19 8:23A 1/26/19	15 F
GLUCOSE (mg/dL)	
1/26/19 8:23A 1/26/19	102 F
CALCIUM (mg/dL)	
1/26/19 8:23A 1/26/19	8.9 F
OBC/DIEE	
CBC/DIFF Coll Dt/Tm Beautted	Value Ctatus
Coll Dt/Tm Resulted	Value Status
WBC (K/uL)	
1/26/19 8:23A 1/26/19	12.01* F
RBC (M/uL)	
1/26/19 8:23A 1/26/19	3.89* F
HGB (g/dL)	
1/26/19 8:23A 1/26/19	12.9* F
HCT (%)	
1/26/19 8:23A 1/26/19	37.7* F
MCV (fL)	
1/26/19 8:23A 1/26/19	96.9 F
MCH (pg)	00.0
1/26/19 8:23A 1/26/19	33.2 F
MCHC (g/dL) 1/26/19 8:23A 1/26/19	34.2 F
RDW (%)	34.2 F
1/26/19 8:23A 1/26/19	12.2 F
PLATELET COUNT (K/uL)	1 de 1 de . i
1/26/19 8:23A 1/26/19	172 F
MPV (fL)	17.44
1/26/19 8:23A 1/26/19	9.8 F
NEUTS (%)	
1/26/19 8:23A 1/26/19	67.8 F
LYMPHS (%)	
1/26/19 8:23A 1/26/19	24.7 F
MONOS (%)	
1/26/19 8:23A 1/26/19	7.0 F
BASOS (%)	
1/26/19 8:23A 1/26/19	0.1 F
IMMATURE GRANULOCYT	
1/26/19 8:23A 1/26/19	0.4 F
ABS. NEUTS (K/uL) 1/26/19 8:23A 1/26/19	Q 1 A* E
	8.14* F
ABS. LYMPHS (K/uL) 1/26/19 8:23A 1/26/19	2.97 F
1/20/19 0.23/ 1/20/19	4.01 l



H&P Notes (continued)

H&P by Clemens Maria Schirmer, MD at 01/26/19 0630 (continued)

ABS. MONOS (K/uL)

1/26/19 8:23A 1/26/19 0.84 F

ABS. BASOS (K/uL)

1/26/19 8:23A 1/26/19 0.01 F

ABSOLUTE IMMATURE GRANULOCYTES (K/uL)

1/26/19 8:23A 1/26/19 0.05 F:

No COMPREHENSIVE orders found

No PT orders found

Medications:

Medication Orders Placed This Encounter

Medications

- acetaminophen (TYLENOL) tab 650 mg
- · aspirin tab 325 mg
- butalbital-acetaminophen-caffeine 50-325-40 mg per tab (FIORICET) 1 Tab
- · citalopram (CeleXA) tab 40 mg
- lisinopril (PRINIVIL) tab 20 mg
- mirtazapine (REMERON) tab 15 mg
- NSS infusion
- · omeprazole (PriLOSEC) cap 20 mg
- · ondansetron (ZOFRAN) inj 4 mg
- oxygen GAS 2 L/min(Oxygen)

PLAN:

Left cerebellar strokes, concern for LVA dissection.

Awaiting better imaging. MRI/MRA head. Will likely take for angiogram tomorrow or Monday after assessing these images

ASA 325 mg PO daily for now

This plan and the patients management will be discussed with Dr. Connelly and the bedside team.

Critical Care Billing:

I spent 45 minutes of critical time at bedside and on the hospital service floor caring for the patient. Condition of patient: at risk for acute worsening of neurological with potential for permanent injury, neurological organ system failure, or death, at high risk for acute worsening of condition with potential for permanent injury, organ system failure, or death, at risk for hemodynamically unstable, at risk for hemorrhage Prognosis: High potential for worsening or death

Activities include: at bedside and on patient's hospital floor, reviewing chart, personally reviewing films, reviewing vitals, speaking with other physicians

Intensity of services:

Management of: vitals electrolytes fluid status hemodynamic status



H&P Notes (continued)

H&P by Clemens Maria Schirmer, MD at 01/26/19 0630 (continued)

respiratory or airway status acute stroke - ischemic thrombolytic agents, anticoagulations, anti-thrombotics or reversal of anticoagulation neuromuscular failure and or paralysis

Clemens M. Schirmer, MD, PhD, FAANS, FACS, FAHA

Director Geisinger Comprehensive Stroke Center

System Director of Cerebrovascular and Endovascular Neurosurgery

Department of Neurosurgery and Neuroscience Institute

Geisinger

1/26/2019

9:34 AM

Clemens Maria Schirmer, MD GWV-GEISINGER WYOMING VALLEY 800-332-8901 01/26/19 0936

Interval H and P

interval H and P by Clemens Maria Schirmer, MD at 01/27/19 0756

Author: Clemens Maria Schirmer, MD Filed: 01/27/19 0757

Service: Neurosurgery (GWVSNU)

Date of Service: 01/27/19 0756

Editor: Clemens Maria Schirmer, MD (Physician)

Author Type: Physician Status: Signed

HISTORY & PHYSICAL INTERVAL NOTE - Neurosurgery Service

GWV-GEISINGER WYOMING VALLEY 1000 East Mountain Blvd Wilkes Barre PA 18711

History and Physical Update:

Name: Robert Murray MRN: 5647010 Location: GWV ICU-22/A Date: 1/27/2019 Time: 7:56 AM

Date and Time Patient Was Seen: 1/27/2019 at 7:56 AM

Robert Murray is a 48 year old year-old male with

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Nursing Progress Notes (continued)

Nursing Progress Note by Kathryn Wright V, RN at 01/29/19 1056 (continued)

Author: Kathryn Wright V, RN

Service: Neurology (GWVNEU)

Filed: 01/29/19 1100 Date of Service: 01/29/19 1056

Editor: Kathryn Wright V, RN (Registered Nurse)

Author Type: Registered Nurse

Status: Signed

EVALUATION- Stroke Team
GEISINGER HEALTH SYSTEM
Department of Neurology

Name: Robert Murray MRN: 5647010 Location: GWV MS-616/A

HISTORY

"HPI: 48 year old male smoker with HTN and GERD referred to Neurology for cerebellar stroke. Thursday evening, patient had sudden onset balance difficulties with vomiting, headache and dizziness. He presented to Regional hospital and was found to have a cerebellar stroke and ?vertebral artery dissection and was transferred to GWV. Patient denies neck pain, neck injury, heavy lifting. No history of a stroke or heart disease; not on ASA. Denies weakness, numbness, double vision, trouble swallowing. Although he notes sensation difference on exam (L side reduced). Says his vision is blurry and he's having trouble focusing. His dizziness and nausea have improved, but he hasn't been out of bed to know if his balance has improved. He still has the same headache he's had for 2 days."

SUMMARY

In to see patient and provide stroke education. Discussed types of stroke, risk factors including patient's personal risk factors (HTN, smoking), s/s of stroke including "F.A.S.T", when to activate 911, and new medications patient to be prescribed at discharge (ASA, Coumadin, Lipitor). Reviewed options with patient to modify risk factors (well balanced diet, low salt, avoid fried fatty foods, routine exercise, take all medications as prescribed, smoking cessation). Stroke education folder given to patient. All questions answered.

The current plan of care, diagnosis, and results of diagnostics were explained to the patient and/or family. All questions were answered to the patient or family member's satisfaction or escalated to the attention of the attending provider. Education initiated by the nursing staff was reinforced during this visit.

Personal Risk Factors

Patient/Caregiver recognizes the patient's personal stroke risk factors: Hypertension and Tobacco Use

Patient elected to work on these risk factors: Hypertension and Tobacco Use

Discussed the risk of non-compliance with risk factor modification of Hypertension and Tobacco Use.

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Communication Notes (continued)

Communication by Carol N Foura, RN at 01/26/19 0427 (continued)

Pulse

80

Temp 98.8

Resp 14

Carol N Foura, RN Transfer Center Clinical Staff GWV-GEISINGER WYOMING VALLEY 01/26/19 0433

Discharge Summaries

Discharge Summary by Mark A Lacey, PA-C at 01/29/19 1208

Author: Mark A Lacey, PA-C

Service: Neurosurgery (GWVSNU)

Author Type: Physician Assistant - Certified

Filed: 01/30/19 1159

Date of Service: 01/29/19 1208

Status: Signed

Editor: Mark A Lacey, PA-C (Physician Assistant - Certified)

Cosigner: Clemens Maria Schirmer, MD

at 01/30/19 1644

Neurosurgery Discharge/Hospitalization Summary Geisinger Wyoming Valley 1000 East Mountain Rd. Wilkes-Barre, Pa 18711

Patient's Name:

Robert Murray

Patient's DOB:

12/5/1970

Patient's MRN:

5647010

Admission date:

1/26/2019

Discharge date:

1/29/2019

Primary Diagnosis: Left Cerebellar and Left Thalamic Strokes with Left Vertebral Stenosis

Other Diagnoses:

There are no hospital problems to display for this patient.

Past Medical History:

Diagnosis

Date

- GERD (gastroesophageal reflux disease)
- HTN (hypertension)
- · Lumbar disc disorder

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Discharge Summaries (continued)

Discharge Summary by Mark A Lacey, PA-C at 01/29/19 1208 (continued)

Procedure: Diagnostic Cerebral Angiogram

Procedure Date: 1/26/2019

Surgeon: Dr. Clemens Maria Schirmer, MD

Surgical Complications: None

Patient Allergies:

Patient has no known allergies.

MEDICATION UPDATES AT DISCHARGE

START taking these medicat	TART	taking	these	medications	•
----------------------------	------	--------	-------	-------------	---

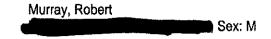
OTAKT taking these inculations	INSTRUCTIONS		
aspirin 325 MG Tablet Start taking on: 1/30/2019	Take 1 Tab by mouth daily.		
atorvaSTATin 40 MG Tablet Commonly known as: LIPITOR	Take 1 Tab by mouth every afternoon.		
warfarin sodium 7,5 MG Tablet Commonly known as: COUMADIN	Take 0.75 Tabs by mouth every evening.		

CONTINUE taking these medications

	INSTRUCTIONS
citalopram 40 MG Tablet Commonly known as: CeleXA	Take 1 Tab by mouth daily.
Esomeprazole Magnesium 40 MG Cpdr	Take 1 Cap by mouth daily.
lisinopril 20 MG Tablet Commonly known as: PRINIVIL	Take 1 Tab by mouth daily.
REMERON 15 MG Tablet Generic drug: mirtazapine	Take 15 mg by mouth at bedtime.
tamsulosin 0.4 MG Capsule Commonly known as: FLOMAX	Take 1 Cap by mouth daily.

STOP taking these medications

ibuprofen 400 MG Tablet Commonly known as: MOTRIN



Discharge Summaries (continued)

Discharge Summary by Mark A Lacey, PA-C at 01/29/19 1208 (continued)

Disposition: Wyoming County Prison

Condition: stable

Follow up Appointments:

- 2 months with Dr Schirmer, to schedule repeat DCA in three months from now.

Appointments already scheduled:

Future Appointments

You do not currently have any appointments scheduled.

Lab Work needed after discharge: Coumadin Clinic, at the prison, with INR goal of 2.5-3.5

Imaging Studies needed and scheduled after discharge:

- none

WOUND CARE/ANGIOGRAM SITE:

- Your groin site incision dressing may be removed 48 hours
- You may shower but do not soak/submerge in water for 1 week (bath tub, hot tub, swimming).
- Keep the site covered with a band-aid for 48 hours. Apply clean band-aid after showering for the next 2 days.
- Please call if any bleeding or swelling at this site
- Apply ice for pain
- Make sure to look at your procedure site every day until completely healed. You may see bruising at the puncture site and that is common after the procedure.
- You may have mild pain, discomfort at the puncture site, you may take over the counter tylenol as needed.

Diet:

Orders Placed This Encounter

Procedures

 Heart Healthy Diet: Sodium Restriction (mg): 3000 --- Average Calories/Day: 1800 --- Fluid Restriction (ml): None

Activity:

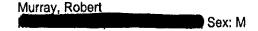
- No lifting, pushing, pulling > 5 pounds
- No deep bending or twisting activity.
- Walk as tolerated

Pertinent History (Brief):

- Patient admitted for left cerebellar stroke with finding of a left thalamic stroke as well. Patient admitted for evaluation and treatment.

Pertinent H/P Exam (Brief):

- Patient showed right side dysmetria but otherwise neurologically intact.



Discharge Summaries (continued)

Discharge Summary by Mark A Lacey, PA-C at 01/29/19 1208 (continued)

Hospital Course (Brief):

- Patient admitted for evaluation of left cerebellar stroke. Patient underwent a DCA with finding a a left VA occlusion. Patient was started on full dose ASA, while being titrated on Coumadin with a goal INR of 2.5-3.5. He was discharged to Wyoming Valley Prison, where he will have the prison Coumadin Clinic to control and manage Coumadin dosing. Patient will follow up in 2 months with Dr Schirmer, to discuss repeat DC in three months.

D/C vitals:

BP: 106 mmHg/82 mmHg (01/29/19 0800)

Pulse: 71 BPM (01/29/19 0800) Temp: 36.56 C (01/29/19 0800) Resp: 18 Resp/min (01/29/19 0800)

Hospital complications: None

LABS:

CHEMISTRY:

BUN, Creatinine, GFR Estimated, Sodium, Potassium, Chloride, Carbon Dioxide, Glucose, Calcium (see below for most recent value):

Lab Results	<u>.</u>	
Component	Value =	Date/Time
BUN	10	01/28/2019 06:49 AM
CREAT	0.8	01/28/2019 06:49 AM
GFRESTIMATED	>60.0	01/28/2019 06:49 AM
GFRESTIMATED	>60.0	02/18/2013 07:36 AM
NA	142	01/28/2019 06:49 AM
POTASSIUM	3.7	01/28/2019 06:49 AM
CL	105	01/28/2019 06:49 AM
CO2	25	01/28/2019 06:49 AM
GLU	94	01/28/2019 06:49 AM
CA	8.9	01/28/2019 06:49 AM

COAGS:

PT, INR (see below for three most recent values):

and the second control of a management of the second control of th
Date/Time
01/29/2019 05:41 AM
01/28/2019 06:49 AM
01/27/2019 01:31 PM
01/29/2019 05:41 AM
01/28/2019 06:49 AM
01/27/2019 01:31 PM
774877

BLOOD COUNT:

WBC, Hgb, Platelets (see below for most recent value):

Lab Results

Component Value Date/Time



Discharge Summaries (continued)

Discharge Summary by Mark A Lacey, PA-C at 01/29/19 1208 (continued)

- Property and the second of t		
WBC	7.72	01/28/2019 06:49 AM
HGB	13.4 (L)	01/28/2019 06:49 AM
PLT	150	01/28/2019 06:49 AM

Pertinent Imaging:

- None new

CONSULTS:

ADULT OCCUPATIONAL THERAPY CONSULT IP
ADULT PHYSICAL THERAPY CONSULT IP
CARE MANAGEMENT CONSULT IP
NEUROLOGY CONSULT IP
REHAB CONSULT IP
CRITICAL CARE MEDICINE CONSULT IP
CARE MANAGEMENT CONSULT IP
ANTI-COAGULATION CONSULT IP

PCP: MASCI, ROBERT G 10 Trieble Rd Ste 3 TUNKHANNOCK, PA 18657 570-996-2700 570-996-2711 (Fax)

Ref: MASCI, ROBERT G[25643] 10 Trieble Rd Ste 3 TUNKHANNOCK, PA 18657 570-996-2700 (office) 570-996-2711 (fax)

NeuroSurgeon:

Dr. Clemens Maria Schirmer, MD 1000 East mountain Dr. Wilkes-Barre, Pa 18711 office: 570-808-3290 fax: 570-808-3298

Mark A Lacey, PA-C



Discharge Summaries (continued)

Discharge Summary by Mark A Lacey, PA-C at 01/29/19 1208 (continued)

Physician Assistant - Certified GWV-GEISINGER WYOMING VALLEY 800-332-8901 01/30/19 1159



All Transcribed Notes

Date of Service: 01/27/19 0559

Consults signed by John Anthony Kline Jr., MD at 03/17/19 0453

Author: John Anthony Kline Jr., MD

Service: ---

Author Type: Physician

Filed: 03/17/19 0453 Da Editor: John Anthony Kline Jr., MD (Physician)

Status: Signed

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CONSULTATION REQUEST
GEISINGER WYOMING VALLEY MEDICAL CENTER
1000 East Mountain Boulevard
Wilkes-Barre, Pennsylvania 18711

MURRAY, ROBERT MR #5647010 DOB: 12/05/1970 Location: IC22

TO DEPT: REHABILITATION MEDICINE

FROM DEPT: SIGNED:

DATE: 01/27/2019

PROBLEM:

PLEASE EVALUATE PATIENT WITH SPECIFIC ATTENTION TO:

CONSULTATION REPORT

REASON FOR CONSULTATION: We are asked to see the patient by Dr. Schirmer secondary to deficits in activities of daily living as well as mobility and need of rehabilitative intervention.

CHIEF COMPLAINT: Gait difficulty secondary to that of generalized weakness as well that of poor balance.

HISTORY OF PRESENT ILLNESS: Robert Murray is a 48-year-old, white male, who at this time, does demonstrate chronic medical conditions significant for high blood pressure, gastroesophageal reflux disorder, as well as tobacco abuse. At this time, he initially presented to the Regional Hospital secondary to that of poor balance, nausea, some emetic episodes and simply feeling out of it. Patient underwent that of a diagnostic workup which revealed evidence of a cerebellar stroke with left vertebral arterial dissection. At that time, was transferred to Geisinger Wyoming Valley Hospital where he was admitted on the service of Dr. Schirmer and was placed in the Intensive Care Unit for monitoring. Secondary to continued deficits in activities of daily living, as well as mobility, physiatric consultation subsequently then had been obtained.

PAST MEDICAL/PAST SURGICAL HISTORY: Significant for that of hypertension, hypertensive cardiovascular disease, chronic intractable low back pain, lumbar disk disease, gastroesophageal reflux disorder, appendectomy, colonoscopy, esophagogastroduodenoscopy.

MEDICATIONS: Extensive as per chart.

ALLERGIES: The patient is not allergic to medication of which he is aware.

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All Transcribed Notes (continued)

Consults signed by John Anthony Kline Jr., MD at 03/17/19 0453 (continued)

PSYCHOSOCIAL HISTORY: At this time, he does admit to utilizing tobacco. States he smokes approximately a pack of cigarettes a day and has done so for 20 or more years. Does admit to utilization of alcohol, drinking approximately 3-5 beers a day approximately 5 times per week. Previously was independent in activities of daily living as well as mobility without utilization of assistive device or adaptive equipment. Indicates that he had been a laborer working on trimming and cutting down trees.

FAMILY HISTORY: Noncontributory, essentially negative.

REVIEW OF SYSTEMS: At this time he does feel somewhat out of it, feels somewhat dizzy and off balance. Denies any chest pain, palpitations, nausea, vomiting, fever, chills, night sweats. All systems reviewed, negative except as previously stated above.

PHYSICAL EXAMINATION: Currently afebrile. Vital signs are stable. Temperature is 98.5 degrees Fahrenheit, pulse 59, respiratory rate 9, blood pressure is 117/79, with oxygen saturation being 96%. HEENT exam shows the head to be normocephalic, atraumatic, essentially unremarkable. Eyes: Extraocular motor is intact. Nose without rhinorrhea. Ears without drainage. Throat without exudate or erythema. Neck is supple. Lymphatic exam shows no cervical, inguinal adenopathy. Cardiovascular Regular rate. No murmurs, rubs, gallops appreciated. Respiratory exam shows lungs to be clear to auscultation and percussion. No evidence of rales, rhonchi, or wheeze bilaterally. Extremity exam shows trace edema in both lower extremities. Dorsalis pedis, radial pulse 2+ bilaterally. Patient exhibits normal capillary refillable in both hands and both feet. Neurologic examination: He is alert and oriented x3. 3/3 in both immediate and 5-minute recall. Manual muscle testing 5/5 strength throughout. Does demonstrate some dysphasia about that of the right upper extremity. His right lower limb is handcuffed to the bed time, as is his left upper limb with that of a corrections officer at his bedside.

DATABASE: Multiple medical records reviewed both new and old of high complexity.

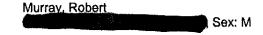
IMPRESSION:

- Left cerebellar cerebrovascular insult.
- Possible left vertebral arterial dissection near the C4 vertebral body.
- Tobacco abuse.
- Mild degenerative osteoarthritic changes.

RECOMMENDATIONS:

- At this time, provide extensive patient education and counseling.
- At this time, engage in physical and occupational therapy. Currently at this time, continue to monitor his neurologic status for evidence of continued improvement or that of potential decompensation.
- 3. Social service consultation will be obtained for discharge planning. At this time, he most likely will be able to return back to the institution with that of therapy provided there. Referral for inpatient rehabilitation will be placed as that of a backup in the event that he does require inpatient rehabilitation.
 4. At this time he is scheduled for potential angiogram either today or Monday with
- that of vascular surgical consultation.

John Anthony Kline Jr, MD



Patient: MPN: Account #:

.om #:

MURRAY, ROBERT

1034068 PARI\$002949125

vice Code: EOP ER OUTPATIENT Bed #:

Adm Date: 1/25/2019

FREI, ANDREW \$ MD Attending:

Primary Gare: UNKNOWN PHY, PRIMARY CARE MD

DOB/Sex:

12/5/1970 Male

Computed Tomography

Accession 820-19-026-00133 Exam Date/Time 1/26/2019 02:32 EST

CTA Neck WWO

Ordering Physician

Patient Age at Exam

FREI, ANDREW S MD 48 years

History: Alteration in mental status with concern for possible stroke

TECHNIQUE: Thin cut helical CT images were acquired through the neck following bolus administration of intravenous notrast. Multiplanar maximum intensity projection reformatted images are provided from the data set. A single dose of 100 co yue 70 was given for CT a chest, abdomen and pelvis, and neck examinations.

FINDINGS:

included arch vessels demonstrate normal appearance. The bilateral there is abnormal appearance of the left vertebral artery. There is abnormal narrowing at the left vertebral artery beginning at its proximal aspect near C7. Cephalad to this there is segmental occlusion near the level of C4 and C5 with some reconstitution near the C3/C4 interspace. Flow can be seen within the vertebral artery cephaled to this but then again appears abnormally narrowed near C2, it is patent to the basilar artery origin which is patent. The right vertebral artery is patent without definite flow-limiting stenosis. The included cervical carotid arterial system demonstrates no evidence of large vessel occlusion or flow-limiting stenosis.

IMPRESSION:

No comparison imaging is available. The current study is limited by technique. This was done concurrently with CTA chest and The design and pelvis and there is suboplimal arterial enhancement and significant venous enhancement. There is an owner and help and there is suboplimal arterial enhancement and significant venous enhancement. There is an owner appearance of the left vertebral artery. Would suspect long segment dissection with superimposed segmental vertebral artery and visualized bilateral carotid arterial system demonstrate no evidence of flow-limiting attended or large vessel occlusion. Recent noncontract CT head 1/26/2019 0:21 did demonstrate evidence of left cerebellar infarct. This could potentially be acute or subacute in nature. MRI would best further characterize. Workstation ID:RAI-LT-AHARPER

seess Firml seess

Signed by: MARPER, ANGELLE S ND Signed (Electronic Signature): 01/26/2019 03:36 am EST

d Image Link

Accession 620-19-025-00887 Exam Date/Time 1/28/2019 00:39 EST

Exam Ordering Physician
CT Head or Brain WO FREI, ANDREW S MD

Patient Age at Exam

48 years

Reason for Exam

(CT Head or Brain WO) Trauma

Noncontrast CT scan of the head

Indication: Trauma

Print Date/Time: 1/25/2019 04:15 EST

Report Request ID: 244727007

Page 24 of 26



All Results (continued)

MRA NECK W WO CONTRAST [503621295] (continued)

Resulted: 01/26/19 1647, Result status: Final result

EXAM

MRI BRAIN W WO CONTRAST; MRA NECK W WO CONTRAST; MRA HEAD WO CONTRAST-1/26/2019

HISTORY

Left cerebellar infarct, left vertebral artery dissection

COMPARISON

None

TECHNIQUE

Multiplanar, multisequence magnetic resonance imaging of brain was performed before and after the administration of intravenous contrast. MR angiography of the head was performed without intravenous contrast. MR angiography of the neck was performed with and without intravenous contrast. Reformatted images were also provided.

FINDINGS

MRI BRAIN:

Multifocal areas of diffusion restriction are present within the left thalamus and left cerebellum. Associated T2/FLAIR signal hyperintensity is also noted in these locations. Findings are compatible with acute/subacute ischemia. A probable late subacute/ early chronic punctate infarct is noted within the right cerebellum. No significant mass effect, midline shift, or hydrocephalus is demonstrated. There is no intracranial hemosiderin deposition. No abnormal intracranial enhancement is present. The orbital contents are grossly unremarkable. Mild-to-moderate pansinus mucosal thickening is present. The mastoid air cells demonstrate trace fluid signal on the right side.

MRA NECK:

The great vessel origins are patent. The proximal subclavian artery is are patent. The common carotid arteries are patent. The carotid bifurcations are patent. The cervical internal carotid arteries are patent. There is abrupt cessation of flow immediately distal to the left vertebral artery origin. Additionally, T1 signal hyperintensity on the axial T1 fat-sat acquisition is also present throughout the left cervical vertebral artery. There is intermittent re-establishment of flow signal within the distal left V2 segment which appears less pronounced within the V3 segment.

MRA HEAD:

Anterior circulation: The distal internal carotid arteries appear patent. The anterior cerebral arteries appear patent. The middle cerebral arteries appear patent.

Posterior circulation: The distal right vertebral artery is patent. Minimal flow signal is present within the distal left vertebral artery, likely secondary to retrograde filling. The basilar artery is patent. The posterior cerebral arteries arise from the basilar tip and appear patent proximally. Asymmetrically decreased flow signal is present within the more distal left PCA, primarily affecting the P3 and P4 segments.

Impression:

IMPRESSION

- 1. Multifocal areas of acute/ subacute ischemia involve the left thalamus and left cerebellum.
- 2. Abrupt cessation of flow signal immediately distal to the left vertebral artery origin is demonstrated. Findings are concerning for high-grade occlusion with associated dissection.
- 3. Additionally, asymmetrically decreased flow signal involves the more distal left PCA branches, primarily affecting the P3 and P4 segments.

This study has been added to the radiology office assistant work list.

HEMOGLOBIN A1C [503594602]

Resulted: 01/26/19 1859, Result status: Final result

Ordering provider: Laura Fierke, PA-C 01/26/19 0857 Resulting lab: GEISINGER MEDICAL CENTER Filed by: Interface, Lab And Rad 01/26/19 1859

Specimen Collection

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	Source	Collected Oil	
		01/26/19 0823	
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Components

Component Value Reference Range Flag	



AVS Reports (continued)

AFTER VISIT SUMMARY

Geisinger

Robert Murray MRN: 5647010 Date of birth: 12/5/1970 Q MS6 GWV, Medical Surgical, Main Hospital 6th Floor

Medication Updates

Medication changes made during your inpatient hospital stay are listed below. Medications to be STARTED, CHANGEO, or STOPPED are listed here. See the Active Medication List below for a full list of your medications.



Your medications have changed

START taking: aspirin 325 MG Tablet Start taking on: 1/30/2019

atorvaSTATin 40 MG Tablet (LIPITOR)

warfarin sodium 7.5 MG Tablet (COUMADIN)

STOP taking: |buprofen 400 MG Tablet (MOTRIN)

Review your ACTIVE MEDICATION LIST below for a complete list of your medications.

Your Next Steps

€ Do

Pick up these medications from any pharmacy with your printed prescription

- aspirin
- atorva\$TATin
- warfarin sodium

簡 Read

☐ Read 7 attachments

DISCHARGE INSTRUCTIONS

By Mark A Lacey, PA-C at 01/29/19 1208

DISCHARGE INSTRUCTIONS

GWV-GEISINGER WYOMING VALLEY 1000 East Mountain Blvd Wilkes Barre PA 18711

Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 1 of 18 Epic

It does not say on this page or any other

page that Mr. Murray should be put in

solitary confinement (better known as the hole) for 6

days as soon as he returns to the juil. Which is exactly

what sargent Mirach did. That is percisly what he was one of

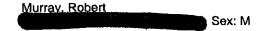
the defendents. I can't believe he was dismissed from the suit

because I miss spelled his name. It baffles me how I can be,

expected to know the spelling of his name. as a matter of fact the
recommendations on page 154 and 155 say nothing about solitary but does say

Physical and occupational is recommended. Which I had none of at that jail.

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AVS Reports (continued)

DISCHARGE INSTRUCTIONS (continued)

Patient Name: Robert Murray

Discharge Date: 1/29/2019

MRN: 5647010

GENERAL INFORMATION:

Date of Your Surgery:

1/29/2019

Your Surgeon's Name: Name of your Surgery:

Dr. Clemens Maria Schlimer, MD, MD Diagnostic Cerebral Anglogram

Your Diagnosis:

Left Cerebellar and Thalamic Strokes. Left Vertebral Occlusion

FOLLOW-UP APPOINTMENT:

- Please contact Neurovascular RN's Angela Callahan and Karissa Graham at 570-808-3252 or 570-808-3601 with any questions or if you do not have a follow up appointment already scheduled
- The neurosurgery main office number is 570-808-3290 if you have any questions or concerns. Please use this number after hours for urgent concerns.
- Your post-procedure appointment as scheduled below
- It is also recommend to follow-up with your primary care physician 2-3 weeks after surgery.

Future Gelsinger Appointments:

 Patient is to follow up in 2 months, with Dr Schirmer, to discuss future diagnostic cerebral angiogram. Please contact Angela or Karissa, as above to schedule follow up visit.

Future Appointments

You do not currently have any appointments scheduled.

WOUND CARE/ANGIOGRAM SITE:

- Your groin site incision dressing may be removed 48 hours
- You may shower but do not soak/submerge in water for 1 week (bath tub, hot tub, swimming).
- Keep the site covered with a band-aid for 48 hours. Apply clean band-aid after showering for the next 2 days.
- Please call if any bleeding or swelling at this site
- Apply ice for pain
- Make sure to look at your procedure site every day until completely healed. You may see bruising at the puncture site
 and that is common after the procedure.
- You may have mild pain, discomfort at the puncture site, you may take over the counter tylenol as needed.

ACTIVITY:

- No heavy lifting or excessive physical activity x 48 hours after surgery
- No heavy lifting over 10 pounds (gallon of milk) for 1 week following your procedure and gradually increase activities over the next 5 days.
- You may feel like resting more after your procedure. Slowly start to do more each day. Rest when you feel it is needed.
- May walk as tolerated
- You may resume sexual activity when comfortable.
- No driving or operating heavy machinery for 24 hours

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Page 2 of 18 Epilo



AVS Reports (continued)

DISCHARGE INSTRUCTIONS (continued)

DIET:

- May resume pre-procedure diet

OUESTIONS

Please call our office if any questions or concerns 570-808-3290 (Neurosurgery office - days, nights, weekends). Or Neurovascular RN at 570-808-3252 or 570-808-3601 during normal business hours.

Please call our office if:

- Bleeding from the puncture site, temperature of 101 or more, redness, drainage, swelling or increased discomfort at the puncture site.
- Change in breathing, chest pain, dizziness, fainting, significant worsening of palpitations, nausea, vomiting, or change in appetite.
- Side-effects from the medications (rash, cough, dizziness, leg cramps, nausea or blurred vision).
- New redness or irritation on your back which can result (rarely) from exposure to radiation during your procedure

Call 911 or go to your closest emergency room if you develop any of the following:

- New sudden onset of weakness, numbness, loss of or changes in your vision, skirred or garbled speech, or any concern for a stroke or mini-stroke.
- Numbness, tingling, loss of sensation, and for coolness to your arms or legs.
- Chest pain or discomfort that is not relieved with rest.
- If profuse bleeding (does not stop in 30 minutes) occurs hold pressure to the site and CALL 911. <u>DO NOT</u>
 DRIVE YOURSELF TO THE HOSPITAL
- Please call with any other questions or concerns.

Do not smoke or use tobacco products in any way!

Review of patient's allergies indicates: No Known Allergies

Coumadin dosing to be titrated by Coagulation Clinic with INR Goal of 2,5-3.5 Discontinue Aspirin Once INR is at Goal

MEDICATION UPDATES AT DISCHARGE START taking these medications INSTRUCTIONS spirin 325 MG Tablet Take 1 Tab by mouth daily. Start taking on: 1/30/2019 storveSTATIn 40 MG Tablet Take 1 Tab by mouth every afternoon. Commonly known as: LIPITOR

Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 3 of 18 Epic



AVS Reports (continued)

DISCHARGE INSTRUCTIONS (continued)

	INSTRUCTIONS
warfarin sodium 7.5 MG Tablet Commonly known as: COUMADIN	Take 0.75 Tabs by mouth every evening.
CONTINUE taking these medications	INSTRUCTIONS
citalopram 40 MG Tablet Commonly known as: CeleXA	Take 1 Tab by mouth daily.
Esomeprazole Magnesium 40 MG Cpdr	Take 1 Cap by mouth daily.
lisinoprii 20 MG Tablet Commonly known as: PRINIVIL	Take 1 Tab by mouth daily.
REMERON 15 MG Tablet Generic drug: mirtazapine	Take 15 mg by mouth at bedtime.
tamasilosin 0.4 MG Capsule Commonly known as: FLOMAX	Take 1 Cap by mouth dally.

STOP taking these medications ibupraten 400 MG Tablet Commonly known as: MOTRIN

Please have patient scheduled with PT for gait training.

Discharge Checklist:

Patient has her prescriptions (if applicable).
Patient was given medication instructions (if applicable).
Patient's Personal Belongings: Are there Personal
Belongings that will need to be returned to the patient?: Yes
(01/17/17 0701)

Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 4 of 18 Epic

Murray, Robert		
	Sex:	M

AVS Reports (continued)

DISCHARGE INSTRUCTIONS (continued)

Patient's Home Medications: Are there Home Medications that will need to be returned to the patient?: No (01/17/17

0701)				
Written CHF instructions were given (if applicable).				
Acknowledgement: I have had and had a chance to ask question	these instructions explained to me, was given a copy is.			
Patient Signature	Date & Time:			
Nurse Signature	Date & Time:			
If the patient is unable to sign:				
Responsible Adult	Date & Time:			
Relationship to Patient	·····			
* PLEASE TAKE THIS FORM TO PHYSICIAN.	YOUR NEXT VISIT WITH YOUR PRIMARY CARE			
uture Appointment Informa	ation			

These follow-up appointments have been scheduled or are in the process of being scheduled. If you have questions about your appointments, please call 1-800-275-6401. When asked to state the name of the physician, please say "Hospital Discharge".

Appointments

You currently have no upcoming appointments scheduled.

You are allergic to the following

No active allergies

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Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 5 of 18 Apple



AVS Reports (continued)

Most Recent Hemoglobin A1c Result

The HgbA1c is a blood test that provides information about your average levels of blood glucose, also called blood sugar.

If the value displays with an (H) after it, this indicates that the result is considered high. If the value displays with an (L) after it, this indicates that the result is considered low. if no letter displays after the value, the result is in the normal range for this test.

RESU	LTS
------	-----

ve Medication List			
	INSTRUCTIONS		
aspirin 325 MG Tablet Start taking on: 1/30/2019 Notes to patient. Had today at 0845	Take 1 Tab by mouth daily.		
atorvaSTATin 40 MG Tablet Commonly known as: UPITOR Notes to patient: Had 1/28 pm	Take 1 Tab by mouth every afternoon.		
citalopram 40 MG Tablet Commonly known as: CeleXA Notes to patient. Had this am 1/29	Take 1 Tab by mouth daily.		
Esomeprazole Magnesium 40 MG Cpdr Notes to patient: Not given today, hadnt been ordered	Take 1 Cap by mouth daily.		
lisinopril 20 MG Tablet Commonly known as: PRINIVII. Notes to patient; Had yesterday am 1/28. Held today for low bp	Take 1 Tab by mouth daily.		
REMERON 15 MG Tablet Geoeric drug: mirtazapine Notes lo palient: Had 1/28 pm	Take 15 mg by mouth at bedtime.		
tamsulosin 0.4 MG Capsule Commonly known as: FLOMAX Notes to patient: Not given today, not ordered	Take 1 Cap by mouth daily.		
	Start taking ow. 1/30/2019 Notes to patient. Had today at 0845 atorvaSTATin 40 MG Tablet Commonly known as: UPITOR Notes to patient: Had 1/28 pm citalopram 40 MG Tablet Commonly known as: CeleXA Notes to patient. Had this am 1/29 Esomeprazole Magnesium 40 MG Cpdr Notes to patient. Not given today, hadnt been ordered lisinopril 20 MG Tablet Commonly known as: PRINIVIE Notes to patient: Had yesterday am 1/28. Held today for low bp REMERON 15 MG Tablet Generic drug: mirrazapine Notes to patient: Had 1/28 pm tamsulosin 0.4 MG Capsule Commonly known as: FLDMAX		

Take 0.75 Tabs by mouth every evening.

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warfarin sodium 7.5 MG Tablet Commonly known as: COUMADIN Notes to patient: Last had coumadin yesterday

Page 6 of 18 Epic



AVS Reports (continued)

You have been diagnosed with a stroke, or with a TIA (transient ischemic attack). Or you have been identified as having a high risk for stroke. During a stroke, blood stops flowing to part of your brain. This can damage areas in the brain that control other parts of the body. Symptoms after a stroke depend on which part of the brain has been affected.

Stroke risk factors

Once you've had a stroke, you're at greater risk for another one. Listed below are some other factors that can increase your risk for a stroke:

- · High blood pressure
- · High cholesterol
- · Cigarette or cigar smoking
- Diabetes
- · Carotid or other artery disease
- · Atrial fibrillation, atrial flutter, or other heart disease
- · Not being physically active
- Obesity
- Certain blood disorders (such as sickle cell anemia)
- · Excessive alcohol use
- · Abuse of street drugs
- Race
- Gender
- · Family history of stroke
- · Diet high in salty, fried, or greasy foods

Changes in daily living

Doing your regular tasks may be difficult after you've had a stroke, but you can learn new ways to manage your daily activities. In fact, doing daily activities may help you to regain muscle strength and bring back function to affected limbs. Be patient, give yourself time to adjust, and appreciate the progress you make.

Daily activities

You may be at risk of falling. Make changes to your home to help you walk more easily. A therapist will decide if you need an assistive device to walk safely.

You may need to see an occupational therapist or physical therapist to learn new ways of doing things. For example, you may need to make adjustments when bathing or dressing:

Tips for showering or bathing

- . Test the water temperature with a hand or foot that was not affected by the stroke.
- Use grab bars, a shower seat, a hand-held showerhead, and a long-handled brush.

Tips for getting dressed

- · Dress while sitting, starting with the affected side or limb.
- Wear shirts that pull easily over your head. Wear pants or skirts with elastic waistbands.
- · Use zippers with loops attached to the pull tabs.

Lifestyle changes

· Take your medicines exactly as directed. Don't skip doses.

Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 9 of 18 Epic



AVS Reports (continued)

- Begin an exercise program. Ask your provider how to get started. Also ask how much activity you should try to get
 on a daily or weekly basis. You can benefit from simple activities such as walking or gerdening.
- Limit alcohol intake, Men should have no more than 2 alcoholic drinks a day. Women should limit themselves to 1
 alcoholic drink per day.
- . Know your cholesterol level. Follow your provider's recommendations about how to keep cholesterol under control.
- If you are a smoker, quit now, Join a stop-smoking program to improve your chances of success. Ask your provider about medicines or other methods to help you quit.
- Learn stress management techniques to help you deal with stress in your home and work life.

Diet

Your healthcare provider will give you information on dietary changes that you may need to make, based on your situation. Your provider may recommend that you see a registered dietitian for help with diet changes. Changes may include:

- · Reducing fat and cholesterol intake
- · Reducing salt (sodium) intake, especially if you have high blood pressure
- · Eating more fresh vegetables and fruits
- Eating more lean proteins, such as fish, poultry, and beans and peas (legumes)
- · Eating less red meat and processed meats
- Using low-fat dairy products
- Limiting vegetable oils and nut oils
- · Limiting sweets and processed foods such as chips, cookies, and baked goods

Follow-up care

- · Keep your medical appointments. Close follow-up is important to stroke rehabilitation and recovery.
- Some medicines require blood tests to check for progress or problems. Keep follow-up appointments for any blood tests ordered by your providers.

Call 911

Call 911 right away if you have any of the following symptoms of stroke:

- · Weakness, tingling, or loss of feeling on one side of your face or body
- · Sudden double vision or trouble seeing in one or both eyes
- Sudden trouble talking or slurred speech
- Trouble understanding others
- · Sudden, severe headache
- · Dizziness, loss of balance, or a sense of falling
- · Blackouts or seizures

F.A.S.T. is an easy way to remember the signs of stroke. When you see these signs, you know that you need to call 911 last.

F.A.S.T. stands for:

- F is for face drooping. One side of the face is drooping or numb. When the person smiles, the smile is uneven.
- A is for arm weakness. One arm is weak or numb. When the person lifts both arms at the same time, one arm may drift downward.
- S is for speech difficulty. You may notice slurred speech or trouble speaking. The person can't repeat a simple sentence correctly when asked.

Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 10 of 18 Epic

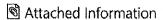


AVS Reports (continued)

 T is for time to call 911. If someone shows any of these symptoms, even if they go away, call 911 right away. Make note of the time the symptoms first appeared.

Date Last Reviewed: 8/26/2019

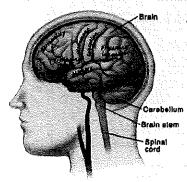
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STROKE, EFFECTS ON THE BRAIN AND BODY (ENGLISH)

Effects of a Stroke on the Brain and Body

When blood supply is cut off from the brain, cells start to die from lack of oxygen. Within minutes, skills such as reasoning, speech, and some degree of arm, leg, or facial movement may be lost. The type of skills and the amount of loss depend on which part of the brain was affected, and how much tissue was damaged.



- . The brain is the body's control center, which handles communication, motor, sensory, and processing functions.
- The cerebellum controls the body's coordination and balance.
- The brain stem links the brain and the spinal cord, it also handles basic body functions.
- · The spinal cord carries messages between the brain and the body.

A stroke causes lost skills

Each part of the brain has a role related to a function in the body. Damage to any part of the brain limits its ability to carry out its role. This results in lost skills or changes in function, and even in personality. Some parts of the brain and its correlating functions that may be affected by stroke are as follows:

- · The front of the brain houses reasoning and the ability to control emotions. Personality resides here.
- . The left side of the brain controls the right side of the body, it also handles speech, language, reading, and writing.
- . The right side of the brain controls the left side of the body.
- The back of the brain controls vision.

Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 11 of 18 Epile

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), Sex: M	

AVS Reports (continued)

. The brain stem handles breathing and swallowing.

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Mattached Information

STROKE, RISK FACTORS FOR (ENGLISH)

Risk Factors for Stroke

Certain health and lifestyle issues—called risk factors—increase your chances of having a stroke. The leading risk factor for stroke is high blood pressure. But there are many other factors that also put you at risk. This page helps you identify which risk factors you have. That way, you know where you need to make healthy changes. Talk to your healthcare provider about ways to help reduce your risk factors.

What are your risk factors?

Risk factors are different for each person. Check next to the factors that apply to you. Keep in mind that some factors, such as your age, can't be changed. But others can be managed.

Healt	th risk factors
1	You have high blood pressure.
1	You're overweight.
'	You have unhealthy cholesterol levels.
	You have atrial fibrillation.
1	You have atrial flutter,
'	You've had a heart attack.
`	You have narrowed arteries.
	You have diabetes.
	You are a man.
	You are an African-American, Alaska Native, or American Indian.
Lifest	tyle risk factors
	You rarely exercise.
	You often eat salty, fried, or greasy foods.
	You smoke.
	You have more than 2 alcoholic drinks per day.
Age a	and family history
	You're over age 60.

A parent, brother, or sister has had a stroke.

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Page 12 of 18 Epic

Metabolic syndrome raises risk

Any of the factors above puts you at increased risk of stroke. But having 3 or more of certain risk factors (a condition called metabolic syndrome) multiplies your risk. These factors include too much weight around your walst, high blood pressure, high blood sugar, and unhealthy cholesterol levels. If you're a woman, your risks may also include polycystic ovary syndrome. If you have any of these risk factors, be sure to talk to your healthcare provider about how to decrease your risk of stroke and improve your overall health.

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Attached Information

STROKE, SYMPTOMS (ENGLISH)

Symptoms of a Stroke



A sudden feeling of weakness on one side of your body may be a sign that you are having a stroke.

During a stroke, blood stops flowing to part of the brain. This can damage areas in the brain that control the rest of the body. Get help right away if any of these symptoms come on suddenly, even if the symptoms don't last.

Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 13 of 18 Epic

Know the symptoms of a stroke

- . Weakness. You may feel a sudden weakness, tingling, or a loss of feeling on 1 side of your face or body including your arm or leg.

 Vision problems. You may have sudden double vision or trouble seeing in 1 or both eyes.
- Speech problems. You may have sudden trouble talking, slurred speech, or problems understanding others.
- . Headache. You may have a sudden, severe headache.
- Movement problems. You may have sudden trouble walking, dizziness, a feeling of spinning, a loss of balance, a feeling of falling, or blackouts.
- · Selzure. You may also have a seizure with a large or hemorrhagic stroke.

Remember: If you have any of these symptoms, call 911 and your doctor as soon as possible.

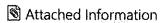
F.A.S.T. is an easy way to remember the signs of a stroke. When you see these signs, you will know that you need to call 911 fast.

F.A.S.T. stands for:

- . F is for face drooping One side of the face is drooping or numb. When the person smiles, the smile is uneven.
- A is for arm weakness One arm is weak or numb. When the person lifts both arms at the same time, one arm may drift downward.
- S is for speech difficulty You may notice slurred speech or difficulty speaking. The person can't repeat a simple sentence correctly when asked.
- . T is for time to dial 911 If someone shows any of these symptoms, even if they go away, call 911 right away. Make note of the time the symptoms first appeared.

Date Last Reviewed: 8/26/2015

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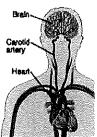
STROKE, WHAT IS ISCHEMIC (ENGLISH)

What Is Ischemic Stroke?

Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 14 of 18 Epic

The brain needs a constant supply of blood to work. During a stroke, blood stops flowing to part of the brain. The affected area is damaged, its functions are harmed or even lost. Most strokes are caused by a blockage in a blood vessel that supplies the brain. They can also occur if a blood vessel in the brain ruptures (bursts open).



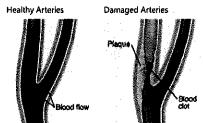
The carotid arteries carry blood from the heart to the brain.

From the heart to the brain

The heart is a pump, it sends oxygen-rich blood out through blood vessels called arteries. If an artery between the heart and the brain is blocked, the brain can't get enough oxygen. Some artery blockages are caused by fatty deposits (plaque). Arteries can also be blocked by blood clots. Some clots form on the plaque. Others can form in the heart—especially in people with atrial fibrillation, an irregular heart rhythm. If a piece of plaque or clot breaks off and enters the bloodstream, it can flow to the brain and cause a stroke.

How a stroke occurs

Ischemic stroke occurs when an artery that supplies the brain is greatly narrowed or blocked. This can be caused by a bulldup of plaque. It can also occur when small pieces of plaque or blood clot (called emboli) break off from the blood vessel or heart into the bloodstream. The emboli flow in the blood until they get stuck in a small blood vessel in the brain.



Healthy arteries. In a healthy artery, the lining of the artery wall is smooth. This lets blood flow freely from the heart to the rest of the body. The brain gets all the blood it needs to function well.

Damaged arteries. High blood pressure, cigarette smoking, or other problems can roughen artery walls. This allows plaque to build up in the walls. Blood clots may also form on the plaque. This can narrow the artery and limit blood flow.

Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 15 of 18 IEpic

Know the symptoms of a stroke

- Weakness. You may feel a sudden weakness, tingling, or a loss of feeling on one side of your face or body including your arm or leg.
- Vision problems. You may have sudden double vision or trouble seeing in one or both eyes.
- Speech problems. You may have sudden trouble talking, slurred speech, or problems understanding others.
- Movement problems. You may have sudden trouble walking, dizziness, a feeling of spinning, a loss of balance, a feeling of falling, or blackouts.

Remember: If you have any of these symptoms, call 911 and your doctor as soon as possible.

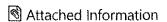
F.A.S.T. is an easy way to remember the signs of a stroke. When you see the signs, you will know what you need to call 911 fast.

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- F is for face drooping. One side of the face is drooping or numb. When the person smiles, the smile is uneven.
- A is for arm weakness. One arm is weak or numb. When the person lifts both arms and the same time, one arm may
 drift downward.
- S is for speech difficulty. You may notice slurred speech or trouble speaking. The person can't repeat a simple sentence correctly when asked.
- T is for time to call 911, if someone shows any of these symptoms, even if they go away, call 911 right away. Make note of the time the symptoms first appeared.

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STROKE: RESOURCES AND SUPPORT (ENGLISH)

Stroke: Resources and Support

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Page 16 of 18 Epic



AVS Reports (continued)



In some cases, health care providers can make

After being released from rehab, your loved one may need ongoing therapy or nursing care. Talk with a social worker or case manager about planning for care and local sources of support.

Planning for home care

- · A nurse may come and check his or her blood pressure.
- A physical therapist may help with exercises. The therapist will often show him or her and family members certain
 exercises that can be done without supervision.
- Speech and occupational therapists can help the whole family communicate and handle tasks of daily living better.

Adult day care

You may be afraid to leave your loved one alone. Adult day care facilities can provide supervision if you need time away during the day. They also give your loved one a chance to be with other people.

Other resources

You can also check your phone book and the internet for other resources. Try the following listings:

- Churches and synagogues
- · Recreation centers
- Adult daycare
- Social services
- Support groupsOnline stroke support communities
- National Stroke Association 800-787-6537
- American Stroke Association 888-478-7653
- Family Caregiver Alliance 800-445-8106

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Page 17 of 18 Epic

Discharge Checklist:

- Do you have all of your prescriptions or know which pharmacy they have been sent to?
- 2. Do you have all of your personal belongings?
- Do you have medications that you brought with you to the hospital (if applicable)?

To understand how well we have prepared you (the Patient or Caregiver) for your discharge, can you answer the following teach-back questions? (Excludes patients being discharged to another facility).

- 1. Why was I in the hospital?
- What do I need to do to care for myself after discharge? (Example: diet, activity, follow up appointments, medications, when to call the doctor, etc.)
- 3. Why is this important to my health?

Acknowledgement: These discharge instructions and any applicable medication instructions are an important part of your care. These instructions have been explained to you, you have been given a copy, and have had a chance to have any questions answered. If you have any further questions or concerns after these questions are reviewed, please discuss with your nurse prior to discharge.

Please take this form with you:

- · when picking up your medications at the pharmacy
- · to your next visit with your Primary Care Physician

Do not smoke or use tobacco products in any way! Quit Line: 1-877-724-1090

Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 18 of 18 Epic

Most Recent After Visit Summary



Robert Murray

4/8/2019 11:30 AM Office Visit

MRN: 5647010

Department: Neurosurgery
2nd Fl Gscw
Provider: Clemens Maria
Encounter #: 237448191

Schirmer, MD

Notes

Progress Notes by Alan Russell Vannan, PA-C at 04/09/19 1324

Author: Alan Russell Vannan, PA-C Physician Assistant - Filed: 04/11/19 0845

Note Status: Signed Cosign: Cosign Not Required Encounter Date;

Editor: Alan Russell Vannan, PA-C (Physician Assistant - Certified)

NEUROSURGERY HISTORY AND PHYSICAL

Name: Robert Murray MRN: 5647010 Date: 4/8/2019 Time: 11:30 am

Patient Type: return from hospital discharge

Referred By: Robert G Masci, DO

Primary Care Physician: Robert G Masci, DO

CC: right sided weakness, headaches

HPI:

Robert Murray is a 48 year old male who was originally seen by our department on 1/26/19 and admitted to the hospital with cerebellar stroke symptoms. The pt underwent an angiogram with Dr. Schirmer on 1/27/19 and was found to have complete LVA occlusion at around C4 spinal level without antegrade flow and Incomplete reconstitution of LVA V3/4 segment vial left costocervical and thyrocervical trunk collateral. At the time of admission, he presented with a PMHx significant for HTN, GERD, tobacco abuse. He was transferred to GWV from Regional hospital due to cerebellar stroke and left vertebral artery dissection. Prior to admission here, the patient states he began to feel "out of it". He c/o global headache, dizziness, ataxia, N/V. He presents today with guards from the prison where he resides. He remains on Aspirin 325 mg daily and Coumadin. He states his Coumadin is being adjusted currently to achieve his goal INR of 2.5 and 3.5. He was instructed to stop ASA once INR was at goal. He is still having ataxia and feeling unsteady. He gets headaches and blurry vision frequently and is still globally weak on his left side. He is here to discuss having a repeat angiogram, with Dr. Schirmer. No recent changes in his medical history. He denies recent illness, infection, fevers, chills, N/V. No recent chest pain or SOB.

ALLERGIES:

Review of patient's allergies indicates:

No Known Allergies

MEDICATIONS:

Current Outpatient Medications Medication	Sig	Dispense	Refill
aspirin 325 MG Tablet	Take 1 Tab by mouth daily.	30 Tab	0
atorvaSTATin (LIPITOR) 40 MG Tablet	Take 1 Tab by mouth every afternoon.	30 Tab	0
warfarin sodium (COUMADIN) 7.5 MG Tablet		50 Tab	1
Esomeprazole Magnesium 40 MG	Take 1 Cap by mouth	10 Cap	0 .



CC'd Chart Routing History (continued)

Notes (continued)

And current diagnosis of

ICD-10-CM

1. Dysarthria, post-stroke

2. Ataxia, post-stroke

3. Vertebral artery dissection (HCC)

ICD-10-CM

IG9.322

I69.322

I69.393

The patient has been stable with stable post-stroke deficits.

Modified Rankin score today is: MODIFIED RANKIN SCALE: 3=Moderate Disability: Requiring some help but able to walk without assistance (Independent) (04/08/19 1341)

All concerns and questions were answered.

Immediate studies or interventions are not recommended.

I recommended 2

a planned follow-up (see above) diagnostic angiogram since angiographic definition is required to define continued care.

Risk include but are not limited to bleeding, groin hematoma, infection, stroke with transient or permanent weakness, numbness or other deficit, vision loss, dissection, coma, death, need for more surgery or interventions, blood vessel damage and/or blockage, kidney damage from contrast dye, focal radiation reaction/hair loss.

The patient and family appeared to understand the options and above risks. The opportunity to ask questions was offered, used and all questions were answered. After considering the risks and benefits of such a procedure and carefully and comprehensively contrasting this to the options of conservative care the patient decided to go ahead and schedule the procedure which we will perform electively.

The patient gave informed consent.

Clemens M. Schirmer, MD, PhD, FAANS, FACS, FAHA

Director Geisinger Comprehensive Stroke Center

System Director of Cerebrovascular and Endovascular Neurosurgery

Department of Neurosurgery and Neuroscience Institute

Geisinger

4/8/2019

1:40 PM

Addendum Notes

No notes of this type exist for this encounter.

Printed on 10/15/21 10:52 AM

Page 1517



H&P Notes (continued)

H&P by Mark A Lacey, PA-C at 05/03/19 0811 (continued)

CC: right sided weakness, headaches

HPI:

Robert Murray is a 48 year old male who was originally seen by our department on 1/26/19 and admitted to the hospital with cerebellar stroke symptoms. The pt underwent an angiogram with Dr. Schirmer on 1/27/19 and was found to have complete LVA occlusion at around C4 spinal level without antegrade flow and Incomplete reconstitution of LVA V3/4 segment vial left costocervical and thyrocervical trunk collateral. At the time of admission, he presented with a PMHx significant for HTN, GERD, tobacco abuse. He was transferred to GWV from Regional hospital due to cerebellar stroke and left vertebral artery dissection. Prior to admission here, the patient states he began to feel "out of it". He c/o global headache, dizziness, ataxia, N/V. He presents today with guards from the prison where he resides. He remains on Aspirin 325 mg daily and Coumadin. He states his Coumadin is being adjusted currently to achieve his goal INR of 2.5 and 3.5. He was instructed to stop ASA once INR was at goal. He is still having ataxia and feeling unsteady. He gets headaches and blurry vision frequently and is still globally weak on his left side. He is here to discuss having a repeat angiogram, with Dr. Schirmer. No recent changes in his medical history. He denies recent illness, infection, fevers, chills, N/V. No recent chest pain or SOB.

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warfarin sodium (COUMADIN) 7.5 MG Tablet	Take 0.75 Tabs by mouth every evening.	50 Tab	1
Esomeprazole Magnesium 40 MG CPDR	Take 1 Cap by mouth daily.	10 Cap	0
citalopram (CELEXA) 40 MG Tablet	Take 1 Tab by mouth daily.	30 Tab	5
lisinopril (PRINIVIL) 20 MG Tablet	Take 1 Tab by mouth daily.	30 Tab	5

PAST MEDICAL HISTORY:

Past Medical History:

Diagnosis Date

- GERD (gastroesophageal reflux disease)
- HTN (hypertension)
- · Lumbar disc disorder

Printed on 10/15/21 10:52 AM



Education (continued)

Title: Ischemic Stroke - Adult Population (Resolved)

Topic: Core Measures/Required Teaching (Resolved)

Point: Symptoms of Stroke (Resolved)

Description:

Patient Education materials:

Signs of Stroke (electronic)

Call 911 immediately if you are experiencing the following symptoms indicating you may be having a stroke. Use the FAST test to remember warning signs of stroke.

F = FACE

Ask the person to smile. Does one side of the face droop?

A = ARMS

Ask the person to raise both arms. Does one arm drift downward?

S = SPEECH Ask the person to repeat a simple sentence. Does the speech sound slurred or strange?

T = TIME

If you observe any of these signs (independently or together), call 9-1-1 immediately.

Patient Friendly Description:

Patient Education materials:

Signs of Stroke (electronic)

Call 911 immediately if you are experiencing the following symptoms indicating you may be having a stroke. Use the FAST test to remember warning signs of stroke.

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Ask the person to smile. Does one side of the face droop?

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S = SPEECH

Ask the person to repeat a simple sentence. Does the speech sound slurred or strange? If you observe any of these signs (independently or together), call 9-1-1 immediately.

T = TIME

Not documented in this visit.

Learner Progress:

Point: Stroke Risk (Resolved)

Description:

Patient Education materials:

Risk Factors for Stroke (electronic)

High blood pressure is the number one risk factor for strokes. Having 3 or more of certain factors (a condition called metabolic syndrome) greatly increases your risk. These factors include too much weight around your waist, high blood pressure, high blood sugar, and unhealthy cholesterol levels. The following also increase your risk for stroke or another stroke:

- -Overweight
- -Unhealthy cholesterol levels
- -Atrial fibrillation
- -Previous heart attack
- Narrowed arteries
- -Diabetes
- -Age
- -Family History
- -Smoking
- -Rarely exercise
- -Eating salty, fried, or greasy foods
- More than 2 alcoholic drinks per day
- -Abuse of illegal drugs

Patient Friendly Description:

Patient Education materials:

Risk Factors for Stroke (electronic)

Murray, Robert Sex: M

Education (continued)

High blood pressure is the number one risk factor for strokes. Having 3 or more of certain factors (a condition called metabolic syndrome) greatly increases your risk. These factors include too much weight around your waist, high blood pressure, high blood sugar, and unhealthy cholesterol levels. The following also increase your risk for stroke or another stroke:

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- -Age
- -Family History
- -Smoking
- -Rarely exercise
- -Eating salty, fried, or greasy foods
- -More than 2 alcoholic drinks per day
- -Abuse of illegal drugs

Learner Not documented in this visit.

Progress:

Point: Medications (Resolved)

Description:

Your doctor has given you medication to reduce the risk of a stroke. But they won't help unless you take them as prescribed. We will review the medications specifically that you are prescribed to ensure that you know why you are taking it, what the medication does, how often and how much you should take and any side effects that should be reported to your doctor. On the day of discharge you will also be given your final discharge instruction with a list of the medication your doctor wants you take once you are discharged.

Patient Friendly Description:

Your doctor has given you medication to reduce the risk of a stroke. But they won't help unless you take them as prescribed. We will review the medications specifically that you are prescribed to ensure that you know why you are taking it, what the medication does, how often and how much you should take and any side effects that should be reported to your doctor. On the day of discharge you will also be given your final discharge instruction with a list of the medication your doctor wants you take once you are discharged.

Learner Not documented in this visit.

Progress:

Point: Resources and Support (Resolved)

Description:

Patient Education materials:

Stroke: Resources and Support (electronic)

Stroke - Self-Care (electronic)

During your hospital stay a staff member will work with you and your family to help make any arrangements needed for your discharge and ongoing support as you recover from your stroke. This may include transfer to a Rehab center, home care, physical therapy, occupational therapy, speech therapy, equipment needs, information about support groups in your area, etc. to help meet your medical and physical needs following your stroke.

Patient Friendly Description:

Patient Education materials:

Stroke: Resources and Support (electronic)

Stroke - Self-Care (electronic)

During your hospital stay a staff member will work with you and your family to help make any arrangements needed for your discharge and ongoing support as you recover from your stroke. This may include transfer to a Rehab center, home care, physical therapy, occupational therapy, speech therapy, equipment needs, information about support groups in your area, etc. to help meet your medical and physical needs following your stroke.

Learner Not documented in this visit.

Progress:



Education (continued)

Point: Discharge Instructions/Preventing Recurrent Stroke (Resolved)

Description:

Patient Education materials:

Discharge Instructions for Stroke (electronic)

Preventing Recurrent Stroke: Eating Healthy (electronic) Preventing Recurrent Stroke: Getting Active (electronic)

Performing routine activities may be more difficult. Be patient and give yourself time to learn new ways to manage your daily activities. Make healthy changes - Making health changes may be easier said than done but it's never too late to make changes for the better. Eat healthy by choosing the right combination of foods, limiting fat consumption and reducing salt intake. Take you medication as prescribed.

Get active at least 30 minutes each day- Being active is key to preventing strokes. It's good for your heart, lowers high blood pressure and helps you recover lost skills as a result of your stroke. The key is finding activities that fit your lifestyle and abilities.

If you smoke get help to stop. Limit alcohol if appropriate. Reduce stress. Manage any high blood pressure with diet, exercise and medication as prescribed. Manage other health problems like heart disease, diabetes, depression, etc.

Patient Friendly Description:

Patient Education materials:

Discharge Instructions for Stroke (electronic)

Preventing Recurrent Stroke: Eating Healthy (electronic) Preventing Recurrent Stroke: Getting Active (electronic)

Performing routine activities may be more difficult. Be patient and give yourself time to learn new ways to manage your daily activities. Make healthy changes - Making health changes may be easier said than done but it's never too late to make changes for the better. Eat healthy by choosing the right combination of foods, limiting fat consumption and reducing salt intake. Take you medication as prescribed.

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If you smoke get help to stop. Limit alcohol if appropriate. Reduce stress. Manage any high blood pressure with diet, exercise and medication as prescribed. Manage other health problems like heart disease, diabetes, depression, etc. Learner Not documented in this visit.

Progress:

Point: Teach Back Questions (Resolved)

Description:

- 1. Describe the symptoms that would prompt you or a family member to call 911 because you may be experiencing a stroke?
- a. Face is uneven, arm or leg weakness, speech is strange.
- 2. List 2 possible causes of a stroke.
- a. Blockage (blood clot or narrowing from clogged arteries.), Bleeding (in or around the brain).
- 3. In your words what factors greatly increase your risk of having a stroke?
- a. High blood pressure, high blood sugar, unhealthy cholesterol level, being overweight, have atrial fibrillation, previous heart attack, narrowed arteries, age, family history, smoking, rarely exercising, smoking, eating salty greasy foods, more than 2 alcoholic drinks per day, abuse of illegal drugs.
- 4. Tell me what you can do to help prevent recurrent stroke?
- a. Make healthy food choices, exercise at least 30 minutes every day.

Patient Friendly Description:

- 1. Describe the symptoms that would prompt you or a family member to call 911 because you may be experiencing a stroke?
- a. Face is uneven, arm or leg weakness, speech is strange.



Education (continued)

2. List 2 possible causes of a stroke.

a. Blockage (blood clot or narrowing from clogged arteries.), Bleeding (in or around the brain).

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- a. High blood pressure, high blood sugar, unhealthy cholesterol level, being overweight, have atrial fibrillation, previous heart attack, narrowed arteries, age, family history, smoking, rarely exercising, smoking, eating salty greasy foods, more than 2 alcoholic drinks per day, abuse of illegal drugs.
- 4. Tell me what you can do to help prevent recurrent stroke?
- a. Make healthy food choices, exercise at least 30 minutes every day.

Learner Not documented in this visit.

Progress:

Point: Ischemic Stroke (Resolved)

Description:

Patient Education Materials:

What is Ischemic Stroke? (electronic)

Stroke is the term used when a part of the brain is damaged or dies because it goes without blood for too long. A stroke caused by lack of blood reaching part of the brain is called an ischemic stroke. There are three types of ischemic strokes:

- a. Thrombotic strokes are caused by a blood clot (thrombus) in an artery going to the brain. The clot blocks blood flow to part of the brain. Blood clots usually form in arteries damaged by arteriosclerosis.
- b. Embolic strokes are caused by a wandering clot (embolus) that's formed elsewhere (usually in the heart or neck arteries). Clots are carried in the bloodstream and clog a blood vessel in or leading to the brain.
- c. Systemic hypoperfusion (low blood flow) occurs because of circulatory failure caused by the heart itself. The heart's pumping action falls and too little blood reaches the brain. This is how a heart attack may cause a stroke.

Patient Friendly Description:

Patient Education Materials:

What is Ischemic Stroke? (electronic)

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- a. Thrombotic strokes are caused by a blood clot (thrombus) in an artery going to the brain. The clot blocks blood flow to part of the brain. Blood clots usually form in arteries damaged by arteriosclerosis.
- b. Embolic strokes are caused by a wandering clot (embolus) that's formed elsewhere (usually in the heart or neck arteries). Clots are carried in the bloodstream and clog a blood vessel in or leading to the brain.
- c. Systemic hypoperfusion (low blood flow) occurs because of circulatory failure caused by the heart itself. The heart's pumping action fails and too little blood reaches the brain. This is how a heart attack may cause a stroke. Learner Not documented in this visit.

Progress:

Point: Handouts Provided (Resolved)

Description:

All handouts and literature have been provided to patient and caregiver (if applicable).

Patient Friendly Description:

All handouts and literature have been provided to patient and caregiver (if applicable).

Learner

Not documented in this visit.

Progress:

Point: Personal Risk Factors (Resolved)

Description:

Patient/Caregiver recognizes their personal stroke risk factors as detailed in Patient Education Comment. Please remember to use smartphrase - .strokeriskfactors - and select the risk factors that patient/caregiver identified.

Learner

Not documented in this visit.

Progress:

Best Practice Alert Acknowledgments (continued)

AVS Reports (continued)

AFTER VISIT SUMMARY

Geisinger

Robert Murray MRN: 5647010 Date of birth: 12/5/1970 OR GWV, Operating Room GWV, Critical Care Building Level 3

Medication Updates

Medication changes made during your inpatient hospital stay are listed below. Medications to be STARTED, CHANGED, or STOPPED are listed here. See the Active Medication List below for a full list of your medications.



Your medications have changed

STOP taking: warfarin sodium 7.5 MG Tablet (COUMADIN)

Review your ACTIVE MEDICATION LIST below for a complete list of your medications.

DISCHARGE INSTRUCTIONS

By Alan Russell Vannan, PA-C at 05/06/19 1647

DISCHARGE INSTRUCTIONS

GWV-GEISINGER WYOMING VALLEY 1000 East Mountain Blvd Wilkes Barre PA 18711

Patient Name: Robert Murray

MRN: 5647010

Discharge Date: 5/6/2019

GENERAL INFORMATION:

Date of Your Surgery: 5/6/2019

Your Surgeon's Name: D. Clemens Maria Schirmer, MD, MD
Name of your Surgery: Diagnostic Cerebral Anglogram

FOLIOW-UP APPOINTMENT:

- Please contact Neurovascular RN's Angela Callahan and Karissa Graham at 570-808-3252 or 570-808-3601 with any questions or if you do not have a follow up appointment already scheduled
- The neurosurgery main office number is 570-808-3290 if you have any questions or concerns. Please use this number after hours for urgent concerns.
- Your post-procedure appointment as scheduled below

Robert Murray (MRN: 5647010) • Printed at 5/6/19 4:56 PM

Page 1 of 6 Epolo



Robert Murray 5/20/2019 Telephone MRN: 5647010

Department: Fam Prac Tunkhannock Encounter #: 243284788

Description: 48 year old male Provider: Robert G Masci, DO

Notes

Telephone Encounter by Chelsea B Giberson, LPN at 05/23/19 1729

Author: Chelsea B Giberson, LPN

Note Status: Signed Cosign: Cosign Not Required Encounter Date:

Date: 05/23/19 1730

Encounter 5/20/2019

Editor:

Chelsea B Giberson, LPN

Spoke with patient
States he does not need any referrals
States he is already set up with specialist

Telephone Encounter by Elena M Moffitt, OSA at 05/20/19 0951

Author:	Elena M Moffitt, OSA	Author Type:	to comments (Alleinanna transform dental employee) de Maria (anno 1920 de Vental de 1920 de Vental employee) de 1920 de Vental employee	Filed:	05/20/19 0958
Note Status:	Signed	Cosign:	Cosign Not Required	Encounter	5/20/2019
a e di la marena a manda di sua se sa a manga arman se la manda di sua se sa a manda di sua se sa di sua se sa		e Manifesta de como en estructe de la como e de encordo de como de conflicio en con		Date:	
Editor:	Flena M Moffitt OSA				

Patient Name: Robert Murray

Patient Medical record Number: 5647010 Primary care provider: Robert G Masci, DO

Name of preferred specialist:

Type of specialist: someone who deals with strokes treatment

Location of specialist: Robert Packer

Specialist's Phone # : Specialist's Fax #: Reason for visit: stroke

Date of visit:

	Patient Informati	on	
Patient Information			
Murray, Robert [5647010]	DOB	12/05/1970	Male
20 Winola Road	Home Phone		
TUNKHANNOCK, PA 18657	Work Phone		

Telephone Contact Summary

Incoming Call

	Provider	Department	Center	
5/20/2019 9:51 AM	Robert G Mascl, DO	Fam Prac Tunkhannock	TUNKHANNOCK	

Printed on 10/15/21 10:52 AM

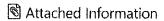
Page 1748



AVS Reports (continued)

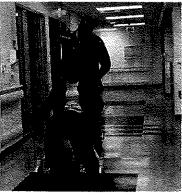
Where to pick up your medications

Pick up these medications from any pharmacy with your printed prescription aspirin • atorvaSTATin • warfarin sodium



EMERGENCY DEPARTMENT (ED), WHEN TO USE THE (ENGLISH)

When to Use the Emergency Department (ED)



An emergency means you could die if you don't get care quickly. Or you could be hurt permanently (disabled). Read below to know when to use—and when not to use—an emergency department (also called ED).

Dangers to your life

Here are examples of emergencies. This is not a complete list. These need immediate care:

- A hard time breathing
- Severe chest pain or pressure
- Choking
- Severe bleeding
- Suddenly not able to move or speak
- · Suddenly not being able to feel an arm or a leg
- Blacking out (fainting)*
- Paisoning
- · Coughing or vomiting blood
- · Severe or persistent vomiting or diamhea
- Changes in mental status or confusion, difficulty waking, unusual behavior
- Changes in vision
- Sudden onset of "worst headache of your life"
- Suicidal thoughtsThoughts of harming another person

Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 7 of 18 Epic

A Charles

AVS Reports (continued)

Dangers of permanent injuries

Here are other emergencies. These also need care right away:

- · Deep cuts or severe burns
- Broken bones, or sudden severe pain and swelling in a joint

When it's an emergency

If you have an emergency, follow the steps below.

1. Go to the nearest emergency department

- If you can, go to the hospital ED closest to you right away.
- If you cannot get there right away, or If it is not safe to move the victim, or take yourself, call 911 or your police emergency number.

2. Call your primary care doctor after the emergency care

- Tell your doctor about the emergency. Call within 24 hours of going to the ED.
- · if you can't call, have someone call for you.
- · Go to your doctor (not the ED) for any follow-up care.

When it's not an emergency

If a problem is not an emergency, follow these steps:

1. Call your primary care doctor

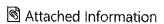
- . If you don't know the name of your doctor, call your health plan.
- · If you can't call, have someone call for you.

2. Follow instructions

- · Your doctor will tell you what you should do.
- You may be told to see your doctor right away. You may be told to go to the ED. Or you may be told to go to an
 urgent care center.
- Follow your doctor's advice.

Date Last Reviewed: 7/1/2017

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STROKE, DISCHARGE INSTRUCTIONS FOR (ENGLISH)

Discharge Instructions for Stroke

Robert Murray (MRN: 5647010) • Printed at 1/29/19 1:23 PM

Page 8 of 18 Epic

et 3174164 pg 50 of 50 for ROBERT MUBBAY

Social Security Administration Retirement, Survivors and Disability Insurance Notice of Award

Office of Central Operations 1500 Woodlawn Drive Baltimore, Maryland 21241-1500 Date: October 26, 2019 BNC#: 19MS529H63621-HA

լգկոկոկորկարդիրի իրկորդիրի հայաստան ROBERT J MURRAY 4422 RIVER STREET SCIO, NY 14880-9708

You are entitled to monthly disability benefits beginning July 2019.

The Date You Became Disabled

We found that you became disabled under our rules on January 24, 2019.

To qualify for disability benefits, you must be disabled for five full calendar months in a row. The first month you are entitled to benefits is July 2019.

What We Will Pay And When

- You will receive \$1,887.00 for October 2019 around November 13, 2019.
- After that you will receive \$1,887.00 on or about the second Wednesday of each month.
- New rules require you to receive your payments electronically, unless you get an exemption from the U.S. Department of the Treasury. Please call Treasury at 1-888-224-2950 to see if you qualify for an exemption.
- The day of the month you receive your payments depends on your date of birth.

Others Who May Be Eligible For Benefits

Your children may now be eligible for benefits on your record. You named the following children when you applied for benefits:

- ELIZABETH MURRAY
- GRACIE MURRAY

Enclosure(s): Pub 05-10153

C

See Next Page

KNOW YOUR RIGHTS MEDICAL, DENTAL AND MENTAL HEALTH CARE

ACLU National Prison Project

Important Note: The law is always evolving. If you have access to a prison law library, it is a good idea to confirm that the cases and statutes cited below are still good law. This document discusses rights provided by the Eighth Amendment of the United States Constitution only. You may have additional rights provided by other sources. You should not rely on this document as a substitute for doing your own legal research.

Medical Care

Prison officials are obligated under the Eighth Amendment to provide prisoners with adequate medical care. This principle applies regardless of whether the medical care is provided by governmental employees or by private medical staff under contract with the government.²

In order to prevail on a constitutional claim of inadequate medical care, prisoners must show that prison officials treated them with "deliberate indifference to serious medical needs."³

What is deliberate indifference?

A prison official demonstrates "deliberate indifference" if he or she recklessly disregards a substantial risk of harm to the prisoner.⁴ This is a higher standard than negligence, and requires that the official knows of and disregards an excessive risk of harm to the prisoner by failing to take reasonable steps to abate that risk.⁵

Prison officials' knowledge of a substantial risk to a prisoner's health can be proven by

¹Estelle v. Gamble, 429 U.S. 97, 103 (1976); Brown v. Plata, 131 S.Ct. 1910, 1928 (2011) ("Prisoners retain the essence of human dignity inherent in all persons. Respect for that dignity animates the Eighth Amendment prohibition against cruel and unusual punishment... A prison that deprives prisoners basic sustenance, including adequate medical care, is incompatible with the concept of human dignity and has no place in civilized society.").

²West v. Atkins, 487 U.S. 42, 56-57(1988); see also Richardson v. McKnight, 521 U.S. 399 (1997).

³ Estelle, 429 U.S. at 104.

⁴ Farmer v. Brennan, 511 U.S. 825, 836 (1994).

⁵ Id. at 837, 847.

circumstantial evidence. For example, it may be inferred from "the very fact that the risk was obvious." This circumstantial proof may be shown by deterioration in prisoners' health, such as obvious conditions like sharp weight loss. A prison official cannot "escape liability if the evidence showed that he merely refused to verify underlying facts that he strongly suspected to be true, or declined to confirm inferences of risk that he strongly suspected to exist."

Officials' knowledge can also be proven by direct evidence. For example, prisoners might present sick call requests, medical records, complaints, formal grievances or other records reflecting: the nature of the medical complaint, the date of the complaint, the individuals to whom the complaint was made, the treatment provided, the adequacy of the treatment, the date the treatment was provided, the medical staff seen, the nature of follow-up care ordered and whether it was carried out, the effects of any delay in obtaining treatment, and any additional information relating to the complaint.

What is a serious medical need?

Some factors courts have considered in determining whether a "serious medical need" is at issue are "(1) whether a reasonable doctor or patient would perceive the medical need in question as important and worthy of comment or treatment; (2) whether the medical condition significantly affects daily activities; and (3) the existence of chronic and substantial pain." Additionally, courts may find a "serious medical need" if a condition "has been diagnosed by a physician as mandating treatment or ... is so obvious that even a lay person would easily recognize the necessity of a doctor's attention."

A serious medical need is present whenever the failure to treat a prisoner's condition "could result in further significant injury or the unnecessary and wanton infliction of pain if not treated." Significant injury, pain or loss of function can constitute "serious medical needs"

⁶ Farmer, 511 U.S. at 842.

⁷ <u>Id.</u> at 843 n.8.

⁸ Brock v. Wright, 315 F.3d 158, 162 (2d Cir. 2003) (internal quotation marks, citation omitted).

⁹ <u>Hill v. DeKalb Reg'l Youth Detention Ctr.</u>, 40 F.3d 1176, 1187 (11th Cir. 1994) (internal quotation marks, citation omitted); see also <u>Schaub v. VonWald</u>, 638 F.3d 905, 914 (8th Cir. 2011); <u>Leavitt v. Corr. Med. Servs. Inc.</u>, 645 F.3d 484, 497 (1st Cir. 2011); <u>Gee v. Pacheco</u>, 627 F. 3d 1178, 1192 (10th Cir. 2010); <u>Iko v. Shreve</u>, 535 F.3d 225, 241 (4th Cir. 2008); <u>Williams v. Rodriguez</u>, 509 F.3d 392, 401 (7th Cir. 2007).

Gayton v. McCoy, 593 F.3d 610, 620 (7th Cir. 2010); Atkinson v. Taylor, 316 F.3d 257, 266 (3d Cir. 2003); Clement v. Gomez, 298 F.3d 898, 904 (9th Cir. 2002); Harrison v. Barkley, 219 F.3d 132, 136 (2d Cir. 2000).

even if they are not life-threatening.¹¹ Pain can constitute a "serious medical need" even if the failure to treat it does not make the condition worse.¹² And the harm to health does not need to have already occurred; exposure to a risk that may cause harm in the future (such as exposure to tobacco smoke) may also be the basis for deliberate indifference.¹³

At least two courts have held that pregnancy, at least in its later stages, constitutes a serious medical need.¹⁴ Complications arising from pregnancy are serious medical needs that require appropriate medical care.¹⁵ Although access to abortion is generally protected,¹⁶ courts may

¹¹ See Schaub v. Vonwald, 638 F.3d 905, 915 (8th Cir. 2011) (paraplegic suffering from sores, edema, and spasticity); Greeno v. Daley, 414 F.3d 645, 653 (7th Cir. 2005) (severe heartburn with frequent vomiting); Brock v. Wright, 315 F.3d 158, 163-64 (2d Cir. 2003) (painful keloids); Farrow v. West, 320 F.3d 1235 (11th Cir. 2003) (need for dentures with pain, weight loss, etc.); Hernandez v. Keane, 341 F.3d 137, 141-42 (2d Cir. 2003) (injured hand with bullet fragments embedded); Clement v. Gomez, 298 F.3d 898 (9th Cir. 2002) (effects of pepper spray on bystanders); Montgomery v. Pinchak, 294 F.3d 492, 500 (3d Cir. 2002) (HIV); Ellis v. Butler, 890 F.2d 1001, 1003 (8th Cir. 1989) (swollen, painful knee); Massey v. Hutto, 545 F.2d 45, 46 (8th Cir. 1976) (ulcers); Soneeya v. Spencer, 851 F. Supp. 2d 228, 244-45 (D. Mass. 2012) (gender identity disorder); Shultz v. Allegheny County, 835 F.Supp.2d 14 (W.D. Pa. 2011) (bacterial pneumonia); Hawkins v. County of Lincoln, 785 F. Supp. 2d 781, 786 (D. Neb. 2011) (suicide watch); Jones v. Pramstaller, 678 F. Supp. 2d 609, 617-20 (W.D. Mich. 2009) (meningitis); Petrichko v. Kurtz, 117 F. Supp. 2d 467, 470 (E.D. Pa. 2000) (dislocated shoulder); Pulliam v. Shelby County, 902 F. Supp. 797, 801-02 (W.D. Tenn. 1995) (denial of Dilantin prescribed for seizure disorder); Chaney v. City of Chicago, 901 F. Supp. 266, 270 (N.D. Ill. 1995) (post-surgical care of foot); Benter v. Peck, 825 F. Supp. 1411, 1417 (S.D. Iowa 1993) (20/400 vision); Bouchard v. Magnusson, 715 F. Supp. 1146, 1148 (D. Me. 1989) (persistent back pain); Smallwood v. Renfro, 708 F. Supp. 182, 187 (N.D. Ill. 1989) (cut lip); Henderson v. Harris, 672 F. Supp. 1054, 1056-59 (N.D. Ill. 1987) (hemorrhoids); Case v. Bixler, 518 F. Supp. 1277, 1280 (S.D. Ohio 1981) (boil).

¹² See Smith v. Knox County Jail, 666 F.3d 1037, 1040 (7th Cir. 2012) (failure to treat dizziness and pain for five days); Boretti v. Wiscomb, 930 F.2d 1150, 1154 (6th Cir. 1991) (denial of dressing and pain medication for wound); Ellis v. Butler, 890 F.2d 1001, 1003 (8th Cir. 1989) (nurse's failure to deliver pain medication); Washington v. Dugger, 860 F.2d 1018, 1021 (11th Cir. 1988) (denial of treatments that could have "eliminated pain and suffering at least temporarily"); H.C. by Hewett v. Jarrard, 786 F.2d 1080, 1083, 1086 (11th Cir. 1986) (denial of medical care for injured shoulder was unconstitutional, although no permanent injury resulted); Lavender v. Lampert, 242 F. Supp. 2d 821 (D. Or. 2002) (failure to provide pain medication for partial spastic paralysis of the foot).

¹³ Helling v. McKinney, 509 U.S. 25, 33 (1993).

¹⁴ <u>Doe v. Gustavus</u>, 294 F. Supp. 2d 1003, 1008 (E.D. Wis. 2003); <u>Webb v. Jessamine County Fiscal Court</u>, 802 F. Supp. 2d 870, 881 (E.D. Ky. 2011).

¹⁵ E.g. Goebert v. Lee County, 510 F.3d 1312, 1326 (11th Cir. 2007) (leaking amniotic fluid severe enough to cause stillbirth); Pool v. Sebastian County, Ark., 418 F.3d 934, 945 (8th Cir. 2005) (bleeding, passing blood clots, and severe pain from cramping); Coleman v. Rahija, 114 F.3d 778, 785 (8th Cir. 1997) (pre-term labor).

uphold prison policies that put additional burdens on women seeking abortions where a woman's health is not endangered by the pregnancy.¹⁷

Some examples of inadequate medical care that may constitute deliberate indifference to serious medical needs include:

- Serious denials or delay in access to medical personnel. 18
- A denial of access to appropriately qualified health care personnel. 19
- A failure to inquire into facts necessary to make a professional judgment.²⁰
- A failure to carry out medical orders²¹ (although a disagreement among doctors as to the appropriate medical orders will not always support a claim of deliberated indifference).²²

¹⁶ Monmouth County Corr. Inst. Inmates v. Lanzaro, 843 F.2d 326 (3d Cir. 1987) (nontherapeutic, elective abortion is a serious medical need in the context of *Estelle*); Roe v. Crawford, 514 F.3d 789 (8th Cir. 2008) (prison policy prohibiting the transportation of pregnant inmates offsite for "nontherapeutic" abortions violated Due Process).

¹⁷ Victoria W. v. Larpenter, 369 F.3d 475, 486 (5th Cir. 2004) (upholding prison policy requiring court order to obtain abortion).

¹⁸ Estelle, 429 U.S. at 104; Thomas v. Cook County, 604 F.3d 293 (7th Cir. 2009) (failure to respond to medical requests for two days where prisoner died from untreated pneumococcal meningitis); Jett v. Penner, 439 F.3d 1091 (9th Cir. 2006) (delay of over a year before seeing a hand specialist); Natale v. Camden County Corr. Facility, 318 F.3d 575 (3d Cir. 2003) (delay of 21 hours in providing insulin to diabetic); Wallin v. Norman, 317 F.3d 558 (6th Cir. 2003) (delay of one week in treating urinary tract infection, and one day in treating leg injury); Weyant v. Okst, 101 F.3d 845, 856-57 (2nd Cir. 1996) (delay of hours in getting medical attention for diabetic in insulin shock); Murphy v. Walker, 51 F.3d 714, 719 (7th Cir. 1995) (two-month delay in getting prisoner with head injury to a doctor).

Hayes v. Snyder, 546 F.3d 516, 526 (7th Cir. 2008) (failure to refer to a specialist); <u>LeMarbe v. Wisneski</u>, 266 F.3d 429 (6th Cir. 2001)(failure of surgeon to send patient to a specialist); <u>Mandel v. Doe</u>, 888 F.2d 783, 789-90 (11th Cir. 1989) (physician's assistant failed to diagnose broken hip, refused to order x-ray, and prevented prisoner from seeing a doctor); <u>Washington v. Dugger</u>, 860 F.2d 1018, 1021 (11th Cir. 1988) (failure to return prisoner to VA hospital for treatment of Agent Orange exposure); <u>Toussaint v. McCarthy</u>, 801 F.2d 1080, 1112 (9th Cir. 1986) (rendering of medical services by unqualified personnel is deliberate indifference); <u>Martinez v. Garden</u>, 430 F.3d 1302 (10th Cir. 2005) (failure to inform prisoner of medical appointments or arrange transportation to see doctor).

²⁰ Goebert v. Lee County, 510 F.3d 1312, 1327-28 (11th Cir. 2007) (failure to look into complaint of pregnant detainee who had been leaking amniotic fluid for a week was an act of "willful blindness"); Miltier v. Beorn, 896 F.2d 848, 853 (4th Cir. 1990) (doctor failed to perform tests for cardiac disease in patient with symptoms that called for them) (overruled on other grounds by Farmer v. Brennan, 511 U.S. 825 (1994)); Inmates of Occoquan v. Barry, 717 F. Supp. 854, 867-68 (D.D.C. 1989) (failure to perform adequate health screening on intake).

- Unjustifiable reliance on non-medical factors in making treatment decisions.²³
- Decisions so egregiously bad that they are not based on sound medical judgment.²⁴

Elements of an adequate medical care system

The Eighth Amendment requires that prison officials provide a system of ready access to adequate medical care. Prisoners must have the ability to ask for care on a regular basis.²⁵ Prison officials show deliberate indifference to serious medical needs if prisoners are unable to make their medical problems known to the medical staff, if sick calls are not conducted regularly and professionally, or if the staff is not competent to examine the prisoners, diagnose illnesses, and then treat or refer the patient.²⁶

²¹ Estelle, 429 U.S. at 105 ("intentionally interfering with treatment once prescribed"); Smith v. Smith, 589 F.3d 736, 739 (4th Cir. 2009) (denial of prescribed treatment for foot infection); Lawson v. Dallas County, 286 F.3d 257 (5th Cir. 2002) (failure to follow medical orders for care of paraplegic prisoner); Walker v. Benjamin, 293 F.3d 1030 (7th Cir. 2002) (refusal to treat pain where prisoner complained of pain, manifested physical indications of pain, and had been prescribed pain medication by outside doctor); Koehl v. Dalsheim, 85 F.3d 86, 88 (2d Cir. 1996) (denial of prescription eyeglasses); Erickson v. Holloway, 77 F.3d 1078, 1080 (8th Cir. 1996) (officer's refusal of emergency room doctor's request to admit the prisoner and take x-rays); Boretti v. Wiscomb, 930 F.2d 1150, 1156 (6th Cir. 1991) (nurse's failure to perform prescribed dressing changes).

²² See, e.g., Norfleet v. Webster, 439 F.3d 392, 396 (7th Cir. 2006) (explaining that "a difference of opinion among physicians on how an inmate should be treated cannot support a finding of deliberate indifference" unless the difference is "so far afield of accepted professional standards as to raise the inference that it was not actually based on a medical judgment.")

²³ See, e.g., Boswell v. Sherburne County, 849 F.2d 1117, 1123 (8th Cir. 1988) (budgetary restrictions); Jones v. Johnson, 781 F.2d 769, 771 (9th Cir. 1986) (same); Ancata v. Prison Health Servs, Inc., 769 F.2d 700, 704-05 (11th Cir. 1985) (refusal to provide specialty consultations without a court order); Newman v. Alabama, 559 F.2d 283, 286 (5th Cir. 1978) (legislative inaction); Wilson v. VanNatta, 291 F. Supp. 2d 811, 816 (N.D. Ind. 2003) (cost).

²⁴ Roe v. Elyea, 631 F.3d 843, 862-63 (7th Cir. 2011) (prescribing treatment without considering individual inmate's condition constituted "a failure to exercise medical – as opposed to administrative – judgment at all."); <u>Greeno v. Daley</u>, 414 F.3d 645, 654-55 (7th Cir. 2005) (treatment "so blatantly inappropriate as to evidence intentional mistreatment likely to seriously aggravate [plaintiff's] condition"); <u>id.</u> at 655 ("doggedly persist[ing] in a course of treatment known to be ineffective"); <u>Adams v. Poag</u>, 61 F.3d 1537, 1543-44 (11th Cir. 1995) (medical treatment that is "so grossly incompetent, inadequate, or excessive as to shock the conscience" constitutes deliberate indifference); <u>Hughes v. Joliet Correctional Ctr.</u>, 931 F.2d 425, 428 (7th Cir. 1991) (evidence that medical staff treated the plaintiff "not as a patient, but as a nuisance").

²⁵ Thomas v. Cook County Sheriff's Dept., 604 F.3d 293, 302-05 (7th Cir. 2009) (failure to have a system in place for timely review of inmate's medical requests sufficient to find liability against the county).

²⁶ <u>Johnson-El v. Schoemehl</u>, 878 F.2d 1043, 1055 (8th Cir. 1989) (sick call available only once a week states a claim for a violation of a clearly established constitutional right); <u>Bass by Lewis v. Wallenstein</u>, 769 F.2d 1173, 1186 (7th

Prisoners also have the right to care and appropriate follow up,²⁷ and to be seen by appropriately credentialed staff, including specialist care required by their condition.²⁸

Several courts have required that facilities screen prisoners at intake to identify persons with communicable diseases or other serious medical conditions that require prompt attention.²⁹ The prison must also provide an adequate system for responding to emergencies. If outside facilities are too remote or too inaccessible to handle emergencies promptly and adequately, then the prison must provide adequate facilities and staff to handle emergencies within the prison.³⁰

Cir. 1985) ("systematic and gross deficiencies" in staffing, quality of personnel, and sick call procedures result in denial of constitutionally adequate medical care); Todaro v. Ward, 565 F.2d 48, 53 (2d Cir. 1977) (system of screening medical complaints was constitutionally inadequate where nurse only viewed prisoner for 15-20 seconds, made no physical examination, and then passed "cryptic" written notes to another nurse to make scheduling decisions); Tillery v. Owens. 719 F. Supp. 1256, 1306 (W.D.Pa. 1989), aff'd, 907 F.2d. 418 (3d Cir. 1990) ("cursory" sick call and sick call where noise level impeded doctors from evaluating patients constitutionally inadequate).

²⁷ E.g. Johnson v. Wright, 412 F.3d 398, 406 (2nd Cir. 2005) (denial of hepatitis C treatment recommended by all of prisoner's treating physicians); <u>Lawson v. Dallas County</u>, 286 F.3d 257, 262-63 (5th Cir. 2002) (failure to comply with doctor's follow-up orders to prevent and treat paraplegic prisoner's decubitus ulcers); <u>Aswegan v. Bruhl</u>, 965 F.2d 676, 677-78 (8th Cir. 1992) (failure to follow doctor's care instructions and not cuff prisoner's hands behind his back); <u>Todaro v. Ward</u>, 565 F.2d 48, 52 (2d Cir. 1977) (substantial delays in scheduling follow-up appointments and tests and repeated non-compliance with medical orders unconstitutional).

²⁸ Hayes v. Snyder, 546 F.3d 516, 524-26 (7th Cir. 2008) (failure to refer prisoner to a specialist when general practitioner himself could not diagnose cause of inmate's pain sufficient to state a claim of deliberate indifference to a serious medical need); Jett v. Penner, 439 F.3d 1091, 1097-98 (9th Cir. 2006) (two and a half month delay in requesting orthopedic consultation sufficient to state a claim against doctor); Oxendine v. Kaplan, 241 F.3d 1272, 1278-79 (10th Cir. 2001) (two week delay in referring prisoner to outside, qualified medical help while reattached portion of inmate's finger blackened and became necrotic states a claim for Eighth Amendment violation); Andrews v. Camden County, 95 F. Supp. 2d 217, 229 (D.N.J. 2000) (failure to have Medical Director on staff created unreasonable risk of violating Eighth Amendment).

²⁹ E.g., Lareau v. Manson, 651 F.2d 96, 109 (2d Cir. 2008) (failure to screen inmates for communicable diseases unconstitutional); Morales Feliciano v. Rossello Gonzalez, 13 F.Supp.2d 151, 210 (D.P.R. 1998) (failure to screen inmates for infectious diseases unconstitutional); see also Woodward v. Corr. Med. Servs. of Ill., Inc., 368 F.3d 917, 928-29 (7th Cir. 2008) (private prison company's failure to train employees, permitting nurses to not fill out intake forms, and allowing practice of not reviewing said forms violated the Eighth Amendment); Reynolds v. Goord, 103 F.Supp.2d 316 (S.D.N.Y. 2000) (failure to take adequate steps, such as screening incoming inmates, to protect health and safety of inmates would be a constitutional violation).

³⁰ Hoptowit v. Ray, 682 F.2d 1237, 1252-53 (9th Cir. 1982); Provencio v. Vazquez, 258 F.R.D. 626, 637 (E.D. Cal. 2009).

The constitution may also be violated by inadequate, unhygienic, or dilapidated equipment and medical facilities.³¹ It is also incumbent upon prisons to keep accurate medical records.³²

Prescription medications and medically necessary diets must be made available to prisoners.³³

A mere difference of medical judgment is not actionable.³⁴ But the decisions of prison doctors are not necessarily unassailable.³⁵ In general, the prisoner must be able to show that the actions of medical staff could not be supported by legitimate medical judgment.³⁶

Harris v. Thigpen, 941 F.2d 1495, 1509 (11th Cir. 1991) (minimally adequate care may require access to expensive equipment such as CAT scanners or dialysis machines); Newman v. Alabama, 503 F.2d 1320, 1331-33 (5th Cir. 1975) ("glaringly unhygienic" conditions and facilities in "a state of disrepair" is a constitutional violation); Benjamin v. Fraser, 161 F. Supp. 2d 151, 186 (S.D.N.Y. 2001) (sanitation and lighting in medical clinic and infirmary fall below constitutional standards), aff'd in part, vacated in part on other grounds, 343 F.3d 35, 52 (2d Cir. 2003); see also Brown v. Plata, 131 S.Ct. 1910, 1933-34 (2011) (citing insufficient space for medical staff to examine and treat prisoners, at least where resulting in delays in treatment, as a constitutional violation).

³² <u>Johnson-El v. Schoemehl</u>, 878 F.2d 1043, 1055 (8th Cir. 1989) ("The keeping of medical records is also a necessity."); <u>Coleman v. Wilson</u>, 912 F. Supp. 1282, 1314 (E.D. Cal. 1995) ("A necessary component of minimally adequate medical care is maintenance of complete and accurate medical records."); <u>Montgomery v. Pinchak</u>, 294 F.3d 492, 500 (3d Cir. 2002) (negligent misplacement of medical records not deliberate indifference, but ten-month refusal to recreate medical file followed by alleged falsification of recreated records states a claim).

Arnett v. Webster, 658 F.3d 742 (7th Cir. 2011) (providing inmate only with pain medication and not medication to treat underlying condition of rheumatoid arthritis for ten months); Brown v. Johnson, 387 F.3d 1344, 1351-52 (11th Cir. 2004) (withdrawal of prescribed medications for HIV and hepatitis C); Wakefield v. Thompson, 117 F.3d 1160, 1165 (9th Cir. 1999) (refusal to provide prisoner with necessary medication upon release as ordered by his doctor); Seller v. Henman, 41 F.3d 1100, 1102-03 (7th Cir. 1994) (failure to provide special diabetic diet can state a claim).

³⁴ Stewart v. Murphy, 174 F.3d 530, 535 (5th Cir. 1999); Meuir v. Green County Employees, 487 F.3d 1115, 1118 (8th Cir. 2007); Norfleet v. Webster, 439 F.3d 392, 396 (7th Cir. 2006); White v. Napoleon, 897 F.2d 103, 110 (3d Cir. 1990) ("[C]ertainly no claim is stated when a doctor disagrees with the professional judgment of another doctor.").

³⁵ See, e.g., Greeno v. Daley, 414 F.3d 645 (7th Cir. 2005) ("a prisoner is not required to show that he was literally ignored"); LeMarbe v. Wisneski, 266 F.3d 429 (6th Cir. 2001) (allegation that doctor closed abdomen incision despite leaking bile sufficient to survive summary judgment); Hunt v. Uphoff, 199 F.3d 1220, 1223-24 (10th Cir. 1999) (one doctor denied insulin prescribed by another doctor); Miller v. Schoenen, 75 F.3d 1305 (8th Cir. 1996) (recommendations from outside hospitals not followed).

³⁶ See Rodriguez v. Plymouth Ambulance Serv., 577 F.3d 816, 832 (7th Cir. 2009) (allegation that treatment not based on legitimate medical judgment sufficient to state a claim), citing Norfleet v. Webster, 439 F.3d 392, 396 (7th Cir. 2006) (deliberate indifference can be inferred when the physician's treatment decision is "so far afield of



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U.S. Supreme Court

ESTELLE v. GAMBLE, 429 U.S. 97 (1976)

429 U.S. 97

ESTELLE, CORRECTIONS DIRECTOR, ET AL. v. GAMBLE CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE , FIFTH CIRCUIT No. 75-929.

Argued October 5, 1976 Decided November 30, 1976

Respondent state inmate brought this civil rights action under 42 U.S.C. 1983 against petitioners, the state corrections department medical director (Gray) and two correctional officials, claiming that he was subjected to cruel and unusual punishment in violation of the Eighth Amendment for inadequate treatment of a back injury assertedly sustained while he was engaged in prison work. The District Court dismissed the complaint for failure to state a claim upon which relief could be granted. The Court of Appeals held that the alleged insufficiency of the medical treatment required reinstatement of the complaint. Held: Deliberate indifference by prison personnel to a prisoner's serious illness or injury constitutes cruel and unusual punishment contravening the Eight Amendment. Here, however, respondent's claims against Gray do not suggest such indifference, the allegations revealing that Gray and other medical personnel saw respondent on 17 occasions during a 3-month span and treated his injury and other problems. The failure to perform an X-ray or to use additional diagnostic techniques does not constitute cruel and unusual punishment but is at most medical malpractice cognizable in the state courts. The question whether respondent has stated a constitutional claim against the other petitioners, the Director of the Department of Corrections and the warden of the prison, was not separately evaluated by the Court of Appeals and should be considered on remand. Pp. 101-108.

516 F.2d 937, reversed and remanded.

MARSHALL, J., delivered the opinion of the Court, in which BURGER, C. J., and BRENNAN, STEWART, WHITE, POWELL, and REHNQUIST, JJ., joined. BLACKMUN, J., concurred in the judgment. STEVENS, J., filed a dissenting opinion, post, p. 108.

Bert W. Pluymen, Assistant Attorney General of Texas, argued the cause for petitioners pro hac vice. With him on [429 U.S. 97, 98] the brief were John L. Hill, Attorney General, David M. Kendall, First Assistant Attorney General, and Joe B. Dibrell, Jr., Assistant Attorney General.

Daniel K. Hedges, by appointment of the Court, <u>425 U.S. 932</u>, argued the cause and filed a brief for respondent pro hac vice.

MR. JUSTICE MARSHALL delivered the opinion of the Court.

Respondent J. W. Gamble, an inmate of the Texas Department of Corrections, was injured on November 9, 1973, while performing a prison work assignment. On February 11, 1974, he instituted this civil rights action under 42 U.S.C. 1983, 1 complaining of the treatment he received after the injury. Named as defendants were the petitioners, W. J. Estelle, Jr., Director of the Department of Corrections, H. H. Husbands, warden of the prison, and Dr. Ralph Gray, medical director of the Department and chief medical officer of the prison hospital. The District Court, sua sponte, dismissed the complaint for failure to state a claim upon which relief could be granted. 2 The Court of

FindLaw: Cases and Codes Case 4:21-cv-00122-MWB-MP Document 28 Filed 11/15/21 Page 56 of 75 page 2 of 10

Appeals reversed and remanded with instructions to reinstate the complaint. 516 F.2d 937 (CA5 1975). We granted certiorari, 424 U.S. 907 (1976). [429 U.S. 97, 99]

Ι

Because the complaint was dismissed for failure to state a claim, we must take as true its handwritten, pro se allegations. Cooper v. Pate, 378 U.S. 546 (1964). According to the complaint, Gamble was injured on November 9, 1973, when a bale of cotton 3 fell on him while he was unloading a truck. He continued to work but after four hours he became stiff and was granted a pass to the unit hospital. At the hospital a medical assistant, "Captain" Blunt, checked him for a hernia and sent him back to his cell. Within two hours the pain became so intense that Gamble returned to the hospital where he was given pain pills by an inmate nurse and then was examined by a doctor. The following day, Gamble saw a Dr. Astone who diagnosed the injury as a lower back strain, prescribed Zactirin (a pain reliever) and Robaxin (a muscle relaxant), 4 and placed respondent on "cell-pass, cell-feed" status for two days, allowing him to remain in his cell at all times except for showers. On November 12, Gamble again saw Dr. Astone who continued the medication and cell-pass, cell-feed for another seven days. He also ordered that respondent be moved from an upper to a lower bunk for one week, but the prison authorities did not comply with that directive. The following week, Gamble returned to Dr. Astone. The doctor continued the muscle relaxant but prescribed a new pain reliever, Febridyne, and placed respondent on cell-pass for seven days, permitting him to remain in his cell except for meals and showers. On November 26, respondent again saw Dr. Astone, who put respondent back on the original pain reliever for five days and continued the cell-pass for another week. [429 U.S. 97, 100]

On December 3, despite Gamble's statement that his back hurt as much as it had the first day, Dr. Astone took him off cell-pass, thereby certifying him to be capable of light work. At the same time, Dr. Astone prescribed Febridyne for seven days. Gamble then went to a Major Muddox and told him that he was in too much pain to work. Muddox had respondent moved to "administrative segregation." 5 On December 5, Gamble was taken before the prison disciplinary committee, apparently because of his refusal to work. When the committee heard his complaint of back pain and high blood pressure, it directed that he be seen by another doctor.

On December 6, respondent saw petitioner Gray, who performed a urinalysis, blood test, and blood pressure measurement. Dr. Gray prescribed the drug Ser-Ap-Es for the high blood pressure and more Febridyne for the back pain. The following week respondent again saw Dr. Gray, who continued the Ser-Ap-Es for an additional 30 days. The prescription was not filled for four days, however, because the staff lost it. Respondent went to the unit hospital twice more in December; both times he was seen by Captain Blunt, who prescribed Tiognolos (described as a muscle relaxant). For all of December, respondent remained in administrative segregation.

In early January, Gamble was told on two occasions that he would be sent to the "farm" if he did not return to work. He refused, nonetheless, claiming to be in too much pain. On January 7, 1974, he requested to go on sick call for his back pain and migraine headaches. After an initial refusal, he saw Captain Blunt who prescribed sodium salicylate (a [429 U.S. 97, 101] pain reliever) for seven days and Ser-Ap-Es for 30 days. Respondent returned to Captain Blunt on January 17 and January 25, and received renewals of the pain reliever prescription both times. Throughout the month, respondent was kept in administrative segregation.

On January 31, Gamble was brought before the prison disciplinary committee for his refusal to work in early January. He told the committee that he could not work because of his severe back pain and his high blood pressure. Captain Blunt testified that Gamble was in "first class" medical condition. The committee, with no further medical examination or testimony, placed respondent in solitary confinement.

Four days later, on February 4, at 8 a. m., respondent asked to see a doctor for chest pains and "blank outs." It was not until 7:30 that night that a medical assistant examined him and ordered him hospitalized. The following day a Dr. Heaton performed an electrocardiogram; one day later respondent was placed on Quinidine for treatment of irregular cardiac rhythm and moved to administrative segregation. On February 7, respondent again experienced pain in his chest, left arm, and back and asked to see a doctor. The guards refused. He asked again the next day. The guards again refused. Finally, on February 9, he was allowed to see Dr. Heaton, who ordered the Quinidine continued for three more days. On February 11, he swore out his complaint.

Case 4:21-cv-00122-MWB-MP Document 28 Filed 11/15/21 Page 57 of 75 FindLaw: Cases and Codes

mankind," id., at 471, quoting Palko v. Connecticut, 302 U.S. 319, 323 (1937). 13

Similarly, in the medical context, an inadvertent failure to provide adequate medical care cannot be said to constitute "an unnecessary and wanton infliction of pain" or to be [429 U.S. 97, 106] "repugnant to the conscience of mankind." Thus, a complaint that a physician has been negligent in diagnosing or treating a medical condition does not state a valid claim of medical mistreatment under the Eighth Amendment. Medical malpractice does not become a constitutional violation merely because the victim is a prisoner. In order to state a cognizable claim, a prisoner must allege acts or omissions sufficiently harmful to evidence deliberate indifference to serious medical needs. It is only such indifference that can offend "evolving standards of decency" in violation of the Eighth Amendment. 14

Ш

Against this backdrop, we now consider whether respondent's complaint states a cognizable 1983 claim. The handwritten pro se document is to be liberally construed. As the Court unanimously held in Haines v. Kerner, 404 U.S. 519 (1972), a pro se complaint, "however inartfully pleaded," must be held to "less stringent standards than formal pleadings drafted by lawyers" and can only be dismissed for failure to state a claim if it appears "beyond doubt that the plaintiff can prove no set of facts in support of his claim which would entitle him to relief." Id., at 520-521, quoting Conley v. Gibson, 355 U.S. 41, 45-46 (1957). [429 U.S. 97, 107]

Even applying these liberal standards, however, Gamble's claims against Dr. Gray, both in his capacity as treating physician and as medical director of the Corrections Department, are not cognizable under 1983. Gamble was seen by medical personnel on 17 occasions spanning a three-month period: by Dr. Astone five times; by Dr. Gray twice; by Dr. Heaton three times; by an unidentified doctor and inmate nurse on the day of the injury; and by medical assistant Blunt six times. They treated his back injury, high blood pressure, and heart problems. Gamble has disclaimed any objection to the treatment provided for his high blood pressure and his heart problem; his complaint is "based solely on the lack of diagnosis and inadequate treatment of his back injury." Response to Pet. for Cert. 4; see also Brief for Respondent 19. The doctors diagnosed his injury as a lower back strain and treated it with bed rest, muscle relaxants, and pain relievers. Respondent contends that more should have been done by way of diagnosis and treatment, and suggests a number of options that were not pursued. Id., at 17, 19. The Court of Appeals agreed, stating: "Certainly an X-ray of [Gamble's] lower back might have been in order and other tests conducted that would have led to appropriate diagnosis and treatment for the daily pain and suffering he was experiencing." 516 F.2d, at 941. But the question whether an X-ray - or additional diagnostic techniques or forms of treatment - is indicated is a classic example of a matter for medical judgment. A medical decision not to order an X-ray, or like measures, does not represent cruel and unusual punishment. At most it is medical malpractice, and as such the proper forum is the state court under the Texas Tort Claims Act. 15 The Court of Appeals was in error in holding that the alleged insufficiency of the [429 U.S. 97, 108] medical treatment required reversal and remand. That portion of the judgment of the District Court should have been affirmed. 16

The Court of Appeals focused primarily on the alleged actions of the doctors, and did not separately consider whether the allegations against the Director of the Department of Corrections, Estelle, and the warden of the prison, Husbands, stated a cause of action. Although we reverse the judgment as to the medical director, we remand the case to the Court of Appeals to allow it an opportunity to consider, in conformity with this opinion, whether a cause of action has been stated against the other prison officials.

It is so ordered.

MR. JUSTICE BLACKMUN concurs in the judgment of the Court.

Footnotes

[Footnote 1] Title 42 U.S.C. 1983 provides:

"Every person who, under color of any statute, ordinance, regulation, custom, or usage, of any State or Territory, subjects, or causes to be subjected, any citizen of the United States or other person within the jurisdiction thereof to the deprivation of any rights, privileges, or immunities, secured by the Constitution and

Case 4:21-cv-00122-MWB-MP Document 28 Filed 11/15/21 Page 58 of 75 FindLaw: Cases and Codes

[Footnote 10] See, e. g., Williams v. Vincent, 508 F.2d 541 (CA2 1974) (doctor's choosing the "easier and less efficacious treatment" of throwing away the prisoner's ear and stitching the stump may be attributable to "deliberate indifference . . . rather than an exercise of professional judgment"); Thomas v. Pate, 493 F.2d 151, 158 (CA7), cert. denied sub nom. Thomas v. Cannon, 419 U.S. 879 (1974) (injection of penicillin with knowledge that prisoner was allergic, and refusal of doctor to treat allergic reaction); Jones v. Lockhart, 484 F.2d 1192 (CA8 1973) (refusal of paramedic to provide treatment); Martinez v. Mancusi, 443 F.2d 921 (CA2 1970), cert. denied, 401 U.S. 983 (1971) (prison physician refuses to administer the prescribed pain killer and renders leg surgery unsuccessful by requiring prisoner to stand despite contrary instructions of surgeon).

[Footnote 11] See, e. g., Westlake v. Lucas, 537 F.2d 857 (CA6 1976); Thomas v. Pate, supra, at 158-159; Fitzke v. Shappell, 468 F.2d 1072 (CA6 1972); Hutchens v. Alabama, 466 F.2d 507 (CA5 1972); Riley v. Rhay, 407 F.2d 496 (CA9 1969); Edwards v. Duncan, 355 F.2d 993 (CA4 1966); Hughes v. Noble, 295 F.2d 495 (CA5 1961).

[Footnote 12] See, e. g., Wilbron v. Hutto, 509 F.2d 621, 622 (CA8 1975); Campbell v. Beto, 460 F.2d 765 (CA5 1972); Martinez v. Mancusi, supra; Tolbert v. Eyman, 434 F.2d 625 (CA9 1970); Edwards v. Duncan, supra.

[Footnote 13] He noted, however, that "a series of abortive attempts" or "a single, cruelly willful attempt" would present a different case. 329 U.S. at 471.

[Footnote 14] The Courts of Appeals are in essential agreement with this standard. All agree that mere allegations of malpractice do not state a claim, and, while their terminology regarding what is sufficient varies, their results are not inconsistent with the standard of deliberate indifference. See Page v. Sharpe, 487 F.2d 567, 569 (CA1 1973); Williams v. Vincent, supra, at 544 (uses the phrase "deliberate indifference"); Gittlemacker v. Prasse, 428 F.2d 1, 6 (CA3 1970); Russell v. Sheffer, 528 F.2d 318 (CA4 1975); Newman v. Alabama, 503 F.2d 1320, 1330 n. 14 (CA5 1974), cert. denied, 421 U.S. 948 (1975) ("callous indifference"); Westlake v. Lucas, supra, at 860 ("deliberate indifference"); Thomas v. Pate, supra, at 158; Wilbron v. Hutto, supra, at 622 ("deliberate indifference"); Tolbert v. Eyman, supra, at 626; Dewell v. Lawson, 489 F.2d 877, 881-882 (CA10 1974).

[Footnote 15] Tex. Rev. Civ. Stat., Art. 6252-19, 3 (Supp. 1976). Petitioners assured the Court at argument that this statute can be used by prisoners to assert malpractice claims. Tr. of Oral Arg. 6.

[Footnote 16] Contrary to MR. JUSTICE STEVENS' assertion in dissent, this case signals no retreat from Haines v. Kerner, 404 U.S. 519 (1972). In contrast to the general allegations in Haines, Gamble's complaint provides a detailed factual accounting of the treatment he received. By his exhaustive description he renders speculation unnecessary. It is apparent from his complaint that he received extensive medical care and that the doctors were not indifferent to his needs.

MR. JUSTICE STEVENS, dissenting.

Most of what is said in the Court's opinion is entirely consistent with the way the lower federal courts have been processing claims that the medical treatment of prison inmates is so inadequate as to constitute the cruel and unusual punishment prohibited by the Eighth Amendment. I have no serious disagreement with the way this area of the law has developed thus far, or with the probable impact of this opinion. Nevertheless, there are three reasons why I am unable to join it. First, insofar as the opinion orders the dismissal of the complaint against the chief medical [429 U.S. 97, 109] officer of the prison, it is not faithful to the rule normally applied in construing the allegations in a pleading prepared by an uncounseled inmate. Second, it does not adequately explain why the Court granted certiorari in this case. Third, it describes the State's duty to provide adequate medical care to prisoners in ambiguous terms which incorrectly relate to the subjective motivation of persons accused of violating the Eighth Amendment rather than to the standard of care required by the Constitution.

I

The complaint represents a crude attempt to challenge the system of administering medical care in the prison where Gamble is confined. Fairly construed, the complaint alleges that he received a serious disabling back injury in November 1973, that the responsible prison authorities were indifferent to his medical needs, and that as a result of

Case 4:21-cv-00122-MWB-MP Document 28 Filed 11/15/21 Page 59 of 75 age 8 of 10

Practice 180 (4th ed. 1969), ill serves the interest of judicial economy.

Frankly, I was, and still am, puzzled by the Court's decision to grant certiorari. 9 If the Court merely thought the Fifth Circuit misapplied Haines v. Kerner by reading the complaint too liberally, the grant of certiorari is inexplicable. On the other hand, if the Court thought that instead of a pleading question, the case presented an important constitutional question about the State's duty to provide medical care to prisoners, the crude allegations of this complaint do not provide the kind of factual basis 10 the Court normally requires as a predicate for the adjudication of a novel and serious constitutional issue, see, e. g., Rescue Army v. Municipal Court, 331 U.S. 549, 568 -575; Ellis v. Dixon, 349 U.S. 458, 464; Wainwright v. City of New Orleans, 392 U.S. 598 (Harlan, J., concurring). 11 Moreover, as the Court notes, all the Courts of Appeals to consider the question have reached substantially the same conclusion that the Court adopts. Ante, at 106 n. 14. Since the Court seldom takes a case merely to reaffirm settled law, I fail to understand why it has chosen to make this case an exception to its normal practice. [429 U.S. 97, 116]

Ш

By its reference to the accidental character of the first unsuccessful attempt to electrocute the prisoner in Louisiana ex rel. Francis v. Resweber, 329 U.S. 459, see ante, at 105, and by its repeated references to "deliberate indifference" and the "intentional" denial of adequate medical care, I believe the Court improperly attaches significance to the subjective motivation of the defendant as a criterion for determining whether cruel and unusual punishment has been inflicted. 12 Subjective motivation may well determine what, if any, remedy is appropriate against a particular defendant. However, whether the constitutional standard has been violated should turn on the character of the punishment rather than the motivation of the individual who inflicted it. 13 Whether the conditions in Andersonville were the [429 U.S. 97, 117] product of design, negligence, or mere poverty, they were cruel and inhuman.

In sum, I remain convinced that the petition for certiorari should have been denied. It having been granted, I would affirm the judgment of the Court of Appeals.

[Footnote 1] In his complaint, Gamble alleged that he had been placed in administrative segregation and remained there through December and January. At the end of January he was placed in solitary confinement. In an affidavit filed in the Court of Appeals the following December, see n. 8, infra, Gamble alleged that with the exception of one day in which he was taken out of solitary to be brought before the disciplinary committee, he had remained in solitary up to the date of the affidavit.

[Footnote 2] According to a state legislative report quoted by the Court of Appeals, the Texas Department of Corrections has had at various times one to three doctors to care for 17,000 inmates with occasional part-time help. 516 F.2d 937, 940-941, n. 1 (1975).

[Footnote 3] This poorly drafted complaint attempts to describe conditions which resemble those reported in other prison systems. For instance, a study of the Pennsylvania prison system reported:

"When ill, the prisoner's point of contact with a prison's health care program is the sick-call line. Access may be barred by a guard, who refuses to give the convict a hospital pass out of whimsy or prejudice, or in light of a history of undiagnosed complaints. At sick call the convict commonly first sees a civilian paraprofessional or a nurse, who may treat the case with a placebo without actual examination, history-taking or recorded diagnosis. Even seeing the doctor at some prisons produces no [429 U.S. 97, 111] more than aspirin for symptoms, such as dizziness and fainting, which have persisted for years." Health Law Project, University of Pennsylvania, Health Care and Conditions in Pennsylvania's State Prisons, in American Bar Association Commission on Correctional Facilities and Services, Medical and Health Care in Jails, Prisons, and Other Correctional Facilities: A Compilation of Standards and Materials 71, 81-82 (Aug. 1974).

A legislative report on California prisons found:

"By far, the area with the greatest problem at the hospital [at one major prison], and perhaps at all the hospitals, was that of the abusive doctor-patient relationship. Although the indifference of M. T. A.s [medical technical assistants] toward medical complaints by inmates is not unique at Folsom, and has been reported continuously

medical care and stands a good chance of remaining that way without intervention," 516 F.2d, at 941. Presumably the Court's remand does not bar Gamble from pursuing these charges, if necessary through filing a new complaint or formal amendment of the present complaint. The original complaint also alleged that prison officials failed to comply with a doctor's order to move Gamble to a lower bunk, that they put him in solitary confinement when he claimed to be physically unable to work, and that they refused to allow him to see a doctor for two days while he was in solitary. Gamble's medical condition is relevant to all these allegations. It is therefore probable that the medical records will be produced and that testimony will be elicited about Gamble's medical care. If the evidence should show that he in fact sustained a serious injury and received only pro forma care, he would surely be allowed to amend his pleading to reassert a claim against one or more of the prison doctors.

[Footnote 9] "The only remarkable thing about this case is its presence in this Court. For the case involves no more than the application of well-settled principles to a familiar situation, and has little significance except for the respondent. Why certiorari was granted is a mystery to me - particularly at a time when the Court is thought by many to be burdened by too heavy a caseload." Butz v. Glover Livestock Comm'n Co., 411 U.S. 182, 189 (STEWART, J., dissenting).

[Footnote 10] As this Court notes, ante, at 100 n. 5, even the meaning of some of the terms used in the complaint is unclear.

[Footnote 11] If this was the reason for granting certiorari, the writ should have been dismissed as improvidently granted when it became clear at oral argument that the parties agreed on the constitutional standard and disagreed only as to its application to the allegations of this particular complaint. See Tr. of Oral Arg. 38, 48.

[Footnote 12] As the four dissenting Justices in Resweber pointed out:

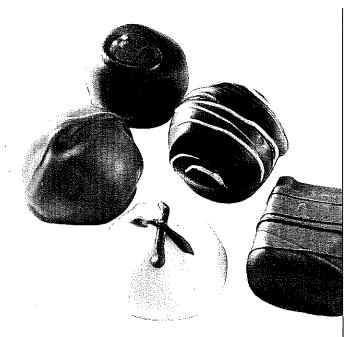
"The intent of the executioner cannot lessen the torture or excuse the result. It was the statutory duty of the state officials to make sure that there was no failure." 329 U.S., at 477 (Burton, J., joined by Douglas, Murphy, and Rutledge, JJ.).

[Footnote 13] The Court indicates the Eighth Amendment is violated "by prison guards in intentionally denying or delaying access to medical care or intentionally interfering with the treatment once prescribed." Ante, at 104-105. If this is meant to indicate that intent is a necessary part of an Eighth Amendment violation, I disagree. If a State elects to impose imprisonment as a punishment for crime, I believe it has an obligation to provide the persons in its custody with a health care system which meets minimal standards of adequacy. As a part of that basic obligation, the State and its agents have an affirmative duty to provide reasonable access to medical care, to provide competent, diligent medical personnel, and to ensure that prescribed care is in fact delivered. For denial of medical care is surely not part of the punishment which civilized nations may impose for crime.

Of course, not every instance of improper health care violates the Eighth Amendment. Like the rest of us, prisoners must take the risk that a competent, diligent physician will make an error. Such an error may give rise to a tort claim but not necessarily to a constitutional claim. But when the State adds to this risk, as by providing a physician who [429 U.S. 97, 117] does not meet minimum standards of competence or diligence or who cannot give adequate care because of an excessive caseload or inadequate facilities, then the prisoner may suffer from a breach of the State's constitutional duty. [429 U.S. 97, 118]

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Mayo Clinic, Family Health Book 4th Edition If the person vomits, wait a few minutes and then give small amounts of the carbohydrate cautiously. If the person is unable to cooperate in swallowing, you can try putting a teaspoonful of a syrup in his or her cheek at intervals of a few minutes. Often, 15 to 30 minutes will pass from the time the sugar is given until symptoms improve.

If the person is unconscious, he or she may need an injection of glucagon just under the skin to reverse the symptoms. Seek medical attention right away if recovery isn't prompt. Remain with the person for an hour or so after the apparent recovery because full mental function sometimes takes that long to return.

Stroke

A stroke is a condition that results from bleeding into the brain or blockage of normal blood flow to the brain. Another term for stroke is *brain attack*. Within minutes of being deprived of essential nutrients, brain cells begin dying — a process that may continue over several hours.

You're at increased risk of stroke if you have high blood pressure or heart disease, or if you smoke. Risk of stroke also increases with age.

A stroke is an emergency. Seek immediate medical treatment. The sooner treatment is given, the more likely that damage can be minimized.

Signs and symptoms of stroke include:

- Sudden numbness, weakness or paralysis of the face, arm or leg, usually on one side of the body
- Slurred speech or trouble talking or understanding speech
- Sudden dimness, blurring or loss of vision, usually in one eye
- Sudden, severe headache a bolt out of the blue with no apparent cause
- Unexpected dizziness, loss of balance or loss of coordination

Signs and symptoms of a stroke may last only a few minutes, or they may persist for several hours. Even short-term warning signs should be taken seriously.

Treatment

While waiting for emergency medical help, pay attention to the person's breathing.

- If breathing stops, begin cardiopulmonary resuscitation (CPR). Minor breathing difficulty may be alleviated by resting the person's head and shoulders on a pillow.
- Watch for vomiting. If vomiting occurs, turn the head to the side so that the vomit can drain out the mouth instead of being breathed into the lungs. Don't allow the person to eat or drink anything.
- If paralysis is present, protect the paralyzed limbs from injury that might occur when the person moves about or is transported.

The Johns Hopkins Medical Book to Health Care

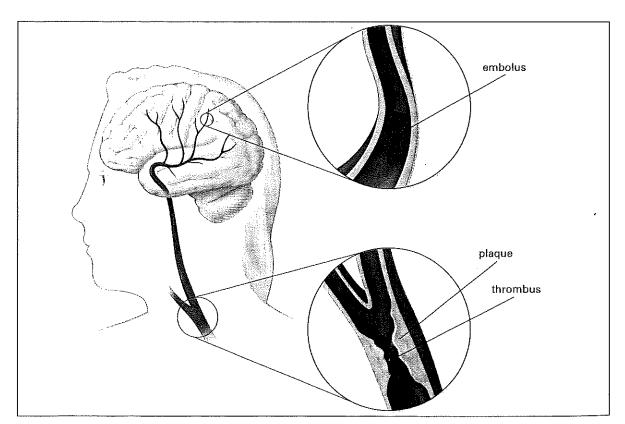
Stroke

ach year about 600,000 people in the United States suffer a new or recurrent stroke—a "brain attack" that damages part of the brain when blood vessels in the brain either burst or become blocked, depriving brain cells of vital oxygen and nutrients. In addition to being the third-leading cause of death of American adults (behind cardiovascular disease and cancer), stroke is a major cause of disability. About 450,000 Americans survive a stroke each year, and stroke survivors total some 4.4 million; most have some degree of lasting impairment, such as speech difficulties, visual problems, and paralysis.

Over the past two decades, the number of strokes per 100,000 people has fallen—a

decline that is probably the result of earlier diagnosis of risk factors (such as hypertension) and more aggressive treatment of them. The news from stroke researchers is likewise encouraging. In addition to alteplase (Activase)—the first drug capable of halting a stroke in progress if administered soon enough after onset—other medications may soon be available for emergency treatment of a stroke. Other forms of treatment are also under investigation, as are new approaches to rehabilitation.

Still, the best weapon against stroke remains prevention. More than half of all strokes could be averted if people took the appropriate steps to control risk factors.



An ischemic stroke occurs when a blockage interrupts blood supply to the brain. The blockage may be caused either by an embolus (a blood clot that travels to the brain from an outside artery) or a thrombus (a clot that forms in an artery, often narrowed by atherosclerotic plaque, leading to or within the brain).

Types of Stroke

Strokes occur when an artery supplying blood to a portion of the brain becomes blocked or ruptures, so that neurons (nerve cells) in affected area are starved of the oxygen and nutrients normally provided by blood. Although the brain performs no physical functions and accounts for only 2 percent of the body's total weight, it consumes about 25 percent of the oxygen and 70 percent of the glucose (sugar) in the bloodstream.

Since neurons do not regenerate once they are destroyed, nerve damage due to a stroke is usually permanent. Despite the death of neurons, however, some improvement usually occurs over time as other neurons are recruited to take over the functions of those that were lost.

There are two basic types of stroke, ischemic and hemorrhagic. Within each of these two major categories of stroke are several subcategories. Proper diagnosis of the specific type of stroke is essential for determining the right course of treatment.

Ischemic Strokes

Approximately 75 percent to 80 percent of all strokes are ischemic. An ischemic stroke occurs when blood flow is interrupted by blockage of an artery supplying blood to the brain. This situation can arise in one of two ways. A blood clot, or thrombus, can form in an artery leading to or within the brain, a condition called cerebral thrombosis. These blood clots tend to develop in arteries already narrowed by atherosclerotic plaques (deposits of cholesterol and other materials).

Less frequently, a blood clot from the heart or a fragment of atherosclerotic plaque in an artery outside of the brain—typically in the aorta or carotid artery in the neck—breaks loose and travels through the bloodstream (embolus) until it lodges in a smaller artery in the brain. Such an event is called a cerebral embolism.

When an ischemic stroke occurs, neurons are damaged not only by the lack of oxygen, but also by a powerful chain of chemical reactions known as the ischemic (or glutamate) cascade, which leads to a buildup of toxins that further compounds cell destruction. The large accumulation of glutamate from injured neurons excites other neurons to release excessive amounts of nitric oxide. The combination of high levels of both substances results in further nerve cell damage. The degree and duration of the ischemic event determine whether the brain suffers only temporary impairment, irreversible injury to a few highly vulnerable neurons, or extensive neurological damage.

Transient ischemic attacks (TIAs). TIAs are short-lived (lasting less than 24 hours) neurological deficits due to ischemia. Most episodes subside within 5 to 20 minutes, and they rarely continue for more than a few hours. By definition, TIAs do not result in permanent neurological deficits and are almost never painful. Hence, they tend to be ignored. TIAs are, however, an important warning sign of an impending stroke and thus warrant prompt medical attention. Patients may have repetitive spells of TIAs days or weeks before a stroke, and one third of those who experience a TIA have a stroke within five years.

Recognition of the cause of TIAs may help to prevent a stroke and its complications. For example, if carotid stenosis (a narrowing of one of the arteries supplying the brain) is detected, an endarterectomy can be performed to remove the blockage (see the text box on page 596).

Stroke continued

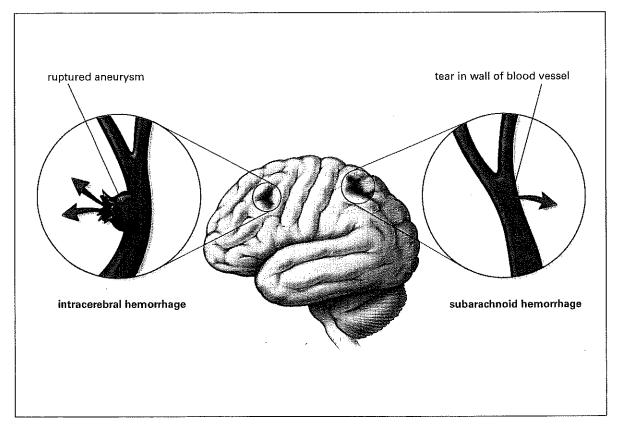
Hemorrhagic Strokes

Accounting for approximately 20 percent of all strokes, hemorrhagic strokes occur when an artery in the brain suddenly bursts and blood leaks out into the surrounding tissue. The bleeding can take place either into the brain itself (intracerebral hemorrhage) or into the space between the brain and the skull (subarachnoid hemorrhage).

Damage occurs in two ways. First, the blood supply is cut off to the parts of the brain beyond the site of the arterial rupture (comparable to ischemic strokes). Second—and posing the greatest danger—the escaped blood forms a mass that, within the rigid skull, exerts excessive pressure on the brain. Blood continues to leak until it coagulates, or

until the pressure inside the skull is equal to the blood pressure in the ruptured artery. Massive hemorrhages are usually fatal; the death rate from an intracerebral hemorrhage is as high as 50 percent in some studies.

Aneurysms—blood-filled pouches ballooning out from weak spots in a blood vessel wall—cause many hemorrhagic strokes. Brain hemorrhage may also result from a congenital blood vessel defect known as an arteriovenous malformation, which is a complex, tangled web of arteries and veins. The walls of these abnormal blood vessels tend to be so thin that surges in blood pressure, or simply the wear and tear of normal blood circulation, may eventually cause a a blood vessel to rupture and bleed into the brain. Some people



A hemorrhagic stroke occurs when an artery in the brain breaks open and leaks blood into the brain itself (intracerebral hemorrhage) or into the space between the brain and the skull (subarachnoid hemorrhage).

Warning Signs and Actions

The following symptoms could indicate that a stroke is under way:

- Sudden numbness, weakness, or paralysis in the face or limbs (often on one side of the body
- Sudden loss, blurring, or dimness of vision
- Mental confusion, loss of memory, loss of consciousness, or unexplained drowsiness
- Slurred speech, loss of speech, or problem understanding others
- Sudden, severe headache
- Unexplained dizziness, lack of coordination, or fall
- Nausea and vomiting, especially when accompanied by any of the previous symptoms

Actions to take: It's common for people to deny the possibility that a stroke is occurring. Don't hesitate to take prompt action. Call or have someone call 911 for an ambulance.

The person suffering the stroke should be made comfortable while waiting for the ambulance and should not drink anything other than water. If an ambulance is not available, a friend or family member should drive the patient to the hospital. The patient should never drive himself or herself. At the hospital, be sure to inform hospital personnel if the patient has any known medical conditions or is taking any medications.

with an arteriovenous malformation experience seizures, usually during their 20s and 30s.

Symptoms of Stroke

Like a heart attack, a stroke is an emergency that requires immediate medical attention. Yet, while most people can recognize the characteristic symptoms of a heart attack, many are unaware of the symptoms of a stroke. Furthermore, symptoms of a TIA (see page 593) may appear suddenly and subside so quickly that sufferers get the false impression that there is no serious problem.



Anyone who experiences the sudden onset and persistence of any of the symptoms of stroke (see the text box above) must call 911 for an ambulance or go straight to the hospital. Rapid diagnosis and treatment may minimize damage to brain tissue and save lives.

Long-Term Effects of a Stroke

In addition to the initial emergency symptoms, strokes generally produce lasting neurological deficits that may impair a patient's senses, motor skills, behavior, language ability, memory, or thought processes, depending on which portions of the brain are damaged (as well as on the type and severity of the stroke). A stroke may produce other long-term complications, including seizures, impaired concentration, poor judgment, erratic sleep cycles, loss of libido, emotional instability, and depression.

Prevention

A number of factors contribute to the overall chance of having a stroke. Some risk factors cannot be modified. These include age (the incidence of stroke more than doubles with each successive decade after age 55); gender (overall, the incidence of stroke is 19 percent higher in men than in women); and race (African Americans have about twice as high a risk of death and disability from a stroke as

Stroke continued

Medical Therapy for Stroke Prevention

Both medications and surgical procedures are used to prevent strokes in patients with certain risk factors.

Medications. Abnormal blood clotting can lead to ischemic stroke. Fortunately, two types of anti-clotting drugs may help prevent abnormal clot formation in people with atrial fibrillation or a history of prior stroke. *Antiplatelet drugs* (such as aspirin) reduce clot formation by inhibiting the aggregation of blood platelets. *Anticoagulants* (such as warfarin and heparin), which inhibit clot formation at a different stage in the clotting process, are the most effective agents for preventing embolic strokes.

Surgery. In people who have severe blockages in one or both carotid arteries (the major arteries in the neck), a surgical procedure called carotid endarterectomy can clear the arteries. This operation significantly reduces the risk of stroke and TIA in some patients. Because the procedure is

associated with significant risks, it should be performed only by an experienced surgeon at a medical center known to have a complication rate of no more than 3 percent to 4 percent. Getting a second opinion before undergoing surgery is also strongly recommended.

Another method for opening a partially blocked carotid artery is angioplasty (see page 91), a procedure first used to open coronary arteries in people with coronary heart disease. Angioplasty may also involve implanting a stent—a flexible metal tube placed inside a clogged artery to keep it propped open. Thus far, stent implantation has had mixed results and some experts have raised concerns about it, especially because of a risk of blood clots. Angioplasty may be a good option for high-risk patients who are unable to undergo carotid endarterectomy, which is a more extensive surgical procedure.

whites, and Hispanics are also at higher risk). Other risk factors are family history and a prior history of stroke: Stroke survivors are at substantially higher risk for a subsequent stroke.

Fortunately, though, a number of risk factors can be changed, and controlling or treating them through lifestyle measures or medical therapy is the best way to reduce the risk of stroke. The more of these factors you control, the lower your risk. The recommendations below summarize guidelines issued by the Stroke Council of the American Heart Association. (Following these recommendations can also reduce your risk of coronary heart disease.)

Blood pressure. High blood pressure, or hypertension, is the single greatest risk for

stroke. People with severe hypertension are up to eight times more likely to have a stroke than those with normal blood pressure. Even mild elevations boost risk by 1.5 times. Studies show that maintaining a blood pressure of 140/90 mm Hg or lower is the single most important measure for decreasing stroke risk.

Smoking. Smoking nearly doubles the risk of stroke. Within five years of quitting, risk declines to that of a nonsmoker.

Alcohol. One to two alcoholic drinks daily is associated with a modest decline in the risk for ischemic stroke—though even this moderate level of consumption may raise the risk of hemorrhagic stroke. Habitually drinking larger amounts doubles the risk of stroke by producing cardiac arrhythmias, raising blood pressure, and altering clot formation.

Atrial fibrillation (AF). A common heart rhythm abnormality that affects 2.2 million Americans, AF increases the likelihood of blood clots in the heart, which can lead to an embolic stroke. Doctors typically put AF patients on medication to reduce clot formation (see the text box on page 596).

Cholesterol. Lowering high cholesterol using statin medications has reduced the incidence of ischemic strokes, particularly in people with coronary heart disease and cholesterol elevations. When such people took statins, they were nearly 30 percent less likely to have a stroke than those who took a placebo.

Diabetes. Independent of other risk factors, people with diabetes have a two- to threefold higher risk of ischemic stroke than the general population. Diabetes does not appear to increase the risk of hemorrhagic strokes, however. It is not certain that controlling blood sugar lowers stroke risk.

Circulatory disorders. Strokes can be caused by any number of problems that interfere with the supply of blood to the brain. These include, most significantly, blockage of the carotid arteries (carotid artery stenosis), but also coronary heart disease, sickle cell disease, and severe anemia. Treatment of such problems with medication or surgery may help prevent strokes.

Exercise. Although exercise lowers the risk of death due to coronary heart disease, a similar correlation between exercise and stroke has not yet been established. However, the few studies that have examined this issue have found that regular physical activity lowers the risk of both types of stroke in men and women, possibly by reducing other risk factors, such as obesity and hypertension.

Obesity. Being extremely overweight (see page 458) increases the risk of fatal and non-

fatal stroke by 50 to 100 percent. Although obesity is associated with other risk factors for stroke, such as hypertension and diabetes, it may also be an independent risk factor for stroke.

Diagnosis

When a patient arrives at an emergency room with symptoms of a stroke, time is of the essence: Fast action can minimize neurological damage and even mean the difference between life and death. The attending doctor must rule out other potential causes of the symptoms (such as seizure, brain tumor, diabetic coma, low blood sugar, or migraine headache) and determine the type of stroke (ischemic or hemorrhagic). It is also important to identify what caused the stroke and which part or parts of the brain are affected.

The patient will undergo both a general and a neurological examination to determine how the brain has been affected. Blood tests and urinalysis can also help to identify conditions that can mimic or cause a stroke.

To diagnose the type of stroke, physicians rely on imaging of brain and blood vessels. The standard procedure is a computerassisted tomography (CT or CAT) scan, which can help to pinpoint the location and extent of a blockage, narrowing, or bleeding. Other diagnostic techniques include magnetic resonance imaging (MRI), ultrasound scanning, and cerebral angiography. This last technique, which entails the injection of a dye into the blood stream, provides more detailed information than the other imaging techniques. Because it is an invasive technique with a risk of complications, however, it is used only when noninvasive methods prove inadequate. Newer noninvasive techniques that utilize dyes to obtain improved images of blood vessels are being developed and tested.

Stroke continued



At Johns Hopkins and some other major medical centers, a new type of MRI is being used to further refine diagnoses. The procedure employs special MRI techniques, known as perfusion and diffusion, to determine the extent and severity of brain damage. It is an appropriate procedure for patients who meet certain criteria based on a detailed neurological examination.

Treatment

Immediate emergency care for a stroke requires hospitalization, where life support systems are available, if needed, to maintain respiration and cardiac function. Specific avenues of treatment ultimately depend on whether the stroke is ischemic or hemorrhagic. In ischemic stroke, the primary goal is to restore or at least improve blood flow to the brain; the goal in hemorrhagic stroke is to relieve pressure on the brain and arrest the bleeding.

Treatment of Ischemic Stroke

Careful monitoring and control of blood pressure are essential after a stroke. Following ischemic stroke, elevated pressure is generally acceptable, since it promotes the flow of blood through the partially blocked arteries to reach jeopardized regions of the brain. The exception is when blood pressure is so high that it may damage the brain, heart, or kidneys. In such cases, blood pressure should be lowered slowly. Otherwise, efforts are aimed at preventing low blood pressure (hypotension), which can limit the amount of blood reaching the brain. Body temperature must

also be carefully monitored and controlled, since a fever can compound damage to the brain.

Medications. Until recently, doctors could do little to intervene while an ischemic stroke was in progress. However, with the FDA approval of the first emergency stroke drug, alteplase (Activase), doctors now have a specific course of action to follow for an ischemic stroke. Alteplase—a member of a drug class known as thrombolytic ("clot-busting") agents—is a genetically engineered copy of the naturally occurring tissue-type plasminogen activator (tPA) that has been widely used to treat heart attacks. Prompt administration of alteplase can dissolve a clot that is blocking blood flow to the heart muscle, thereby preventing extensive tissue damage. Some (but not all) studies have shown similar results for strokes, even though thrombolytic drugs are associated with an increased risk of cerebral hemorrhage (a side effect in about 6 percent of patients).

Early treatment is essential. According to American Heart Association guidelines, alteplase should only be used when treatment starts within three hours of the onset of an ischemic stroke. If too much time has elapsed, cerebral bleeding may be more likely and it may be too late to prevent brain damage. Beforehand, all patients must have a neurological examination and a CT scan that is evaluated by an expert to ensure they are appropriate candidates.

Only hospitals equipped for immediate treatment of excessive bleeding should administer alteplase. And it cannot be used in certain individuals, including those who have a hemorrhagic stroke, had another stroke within the previous three months, have blood pressure greater than 185/110 mm Hg, or are currently taking the anticoagulant drugs

Rehabilitation for Stroke

The process of rehabilitation after a stroke starts almost immediately after admission to the hospital and often continues for at least one to two months afterward. At first, the main goal is to reduce or prevent stroke complications, such as stiffening of the limbs or deep vein thrombosis. As the patient's condition stabilizes, the focus turns toward the longer-term goals of restoring mental and physical function, adapting to disability, returning to an active life, and preventing additional strokes.

Although the exact approach depends on the specific loss of function caused by the stroke, rehabilitation typically consists of developing new strategies to overcome deficits and performing exercises designed to improve range of motion in joints, strengthen weak muscles, and restore function to the greatest extent possible.

The Agency for Health Care Policy and Research has made several recommendations to help patients get the most out of rehabilitation. These include beginning rehabilitation as soon as possible, carefully selecting the most appropriate program, setting realistic goals (to avoid later frustration), frequently assessing progress, and following up during the transition back to the community (when the family plays a major role). Individuals may need to accept some degree of disability, but optimal recovery depends on a com-

bination of factors: the patient's determination to succeed, the support of family and friends, and the well-integrated efforts of specialists.

Because continuing medical treatment after a stroke is complicated, one doctor should be selected to oversee care. This approach will ensure there are no gaps in treatment and allow frequent assessments of progress and an eventual phaseout of rehabilitation when patients have progressed as far as they can. Throughout the poststroke period, all medications must be carefully monitored.

Some of the specially trained professionals involved in the rehabilitation process include occupational therapists, who teach patients new ways to perform day-to-day activities (writing, bathing, cooking, or job-related tasks) made difficult because of disability; physical therapists, who provide instruction and exercises to help patients regain the ability to walk and move about independently, as well as to improve strength, flexibility, balance, and overall fitness; registered nurses; social workers, who can provide information on the wide range of community services available to help stroke survivors and their families; and speech-language pathologists, who help patients regain as much as possible their lost swallowing ability and language skills.

heparin or warfarin (however, aspirin users are eligible if they fit all other criteria).

For embolic strokes, the anticoagulant drug heparin is often administered intravenously for several days to prevent new clots from forming and to keep existing clots from getting any larger. Heparin is also the usual immediate medical therapy for strokes due to severe atherosclerotic stenosis in the carotid, vertebral, or basilar arteries (which branch off from the vertebral arteries), although its effectiveness in these situations is not clearly established. Patients with an embolic stroke due to atrial fibrillation may be treated with heart rhythm stabilizers (antiarrhythmic agents such as amiodarone and procainamide).

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Stroke

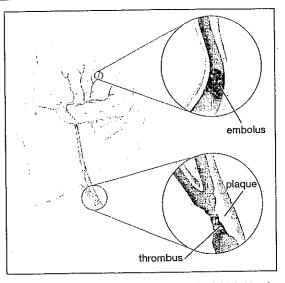
WHAT IS IT?

A stroke is a medical emergency caused either by obstruction of an artery carrying blood to the brain or by rupture of one of the cerebral arteries. Because brain cells cannot regenerate, lack of oxygen from blockage of the blood supply may quickly lead to cell death and permanent brain damage.

Strokes are more likely to occur when arteries have been substantially narrowed by atherosclerosis (a buildup of plaques in the walls of the arteries). Blood flow through narrow arteries is reduced, and blood clots are more likely to form along the uneven surface of the plaque. A clot formed in a carotid artery in the neck or a cerebral (brain) artery can block the artery at the site. Clots may also form elsewhere, become detached, and ultimately block a cerebral artery, causing a stroke. About 80 percent of strokes are due to blockage in either an artery in the brain or in one of the carotid arteries in the neck. The remaining 20 percent result from a rupture of a brain artery (see Brain Hemorrhage for more information). This type of stroke is generally the most life-threatening, primarily because of the excessive pressure the hemorrhage exerts on brain tissue.

SYMPTOMS

- Sudden, severe headache. (Stroke symptoms usually come on suddenly.)
- Weakness or paralysis on one or both sides of the face or body.
- Numbness and tingling in one or both arms or legs.
- Speech difficulty or loss; slurred speech; nonsensical speech.
- · Nausea and vomiting.
- Total blindness or partial loss of vision, double vision, dilated pupils, or crossed eyes due to partial inability to move the eye.
- Dizziness, mental confusion, or sudden loss of consciousness.
- · Memory loss.
- Inability to walk or coordinate limbs.
- Coma.



A stroke may be caused either by an embolus, a blood clot that travels to the brain from an outside artery, or a thrombus, a clot that forms in an artery, often narrowed by plaque, leading to or within the brain.

Although incidence is highest among those over age 65, a stroke may afflict anyone at any age. Symptoms vary depending on the portion of the brain affected, but they often come on suddenly. Some patients will have temporary stroke-like episodes (see Transient Ischemic Attack) prior to a stroke, which may resolve in minutes to a few hours. Strokes are the third leading cause of death in the United States, but the leading cause of disability. Prevention is key.

WHAT CAUSES IT?

- Blood clots that obstruct a carotid or cerebral artery are the most common cause of stroke.
- An embolus (a fragment of plaque, tissue, or blood clot) may develop in the heart and travel to the brain to cause a stroke. Emboli are most likely to develop in association with cardiac arrhythmias (especially atrial fibrillation), valvular heart disease, heart attack, or cardiomyopathy (see these disorders for more information).
- An aneurysm (a balloonlike weak spot in an arterial wall) in a cerebral artery may burst or leak, resulting in a stroke.
- Hypertension is a significant risk factor for stroke.

681 The Johns Hopkins, Complete Home Guide to symptoms and Remedies

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Stroke continued

- Severely narrowed arteries due to atherosclerosis increase the risk of stroke.
- Use of cocaine or amphetamines may boost blood pressure dangerously high and cause a stroke.
- Risk is high among those who have experienced one or more transient ischemic attacks (TIAs)—a temporary blockage in an artery that lasts for less than 24 hours (usually only a few minutes) and causes no brain damage.
- A family history of stroke, early or premature heart attacks, atherosclerosis, or high blood pressure increases the risk of stroke.
- Smoking, alcohol abuse, high blood cholesterol levels, a diet high in fat (especially animal fat), obesity, lack of exercise, diabetes mellitus, and oral contraceptive use all may increase the risk of stroke.
- · Risk increases with age.

PREVENTION

- Don't smoke.
- Eat a diet low in fat, cholesterol, and salt.
- Engage in moderate, regular exercise. Check with a doctor before beginning an exercise program.
- Lose weight if you are more than 20 percent overweight.
- · Have no more than two alcoholic drinks a day.
- Low daily doses of aspirin or other antiplatelet drugs (such as ticlopidine, clopidogrel, and dipyridamole) may be prescribed to reduce the chances of blood clot formation in those who have had a TIA or are otherwise at high risk for stroke.
- Hypertension must be treated aggressively.
- The anticoagulant warfarin may be prescribed for those with atrial fibrillation and some other conditions to prevent blood clot formation.
- Patients who show evidence of substantial atherosclerotic narrowing in the carotid arteries (the two main blood vessels in the neck supplying the brain) may be good candidates for carotid endarterectomy, a surgical procedure to clear away plaque deposits in these arteries.

DIAGNOSIS

- Diagnosis is often made immediately upon examination by a doctor or emergency rescue technician.
- Blood tests are taken.

- CT (computed tomography) scans or MRI (magnetic resonance imaging) may be used to locate an abnormal blood vessel or an area of brain damage.
- Ultrasound scans of carotid arteries reveal narrowing due to atherosclerotic plaque.
- Angiography may be performed to locate the arterial blockage or aneurysm. In this procedure a tiny catheter is inserted into an artery in the groin (femoral artery) and threaded up to the carotid artery in the neck. A contrast material is injected to produce a clear x-ray image of the carotid and cerebral arteries.
- An electrocardiogram (ECG) is performed to detect a cardiac arrhythmia or heart damage from a myocardial infarction (heart attack).
- A cardiac ultrasound (echocardiography) may locate a source of blood clots in the heart.

HOW TO TREAT IT

- Emergency treatment and immediate hospitalization is necessary in the event of a stroke. Life support measures may be required.
- If a stroke is caused by arterial blockage due to a blood clot, thrombolytic (clot-dissolving) drugs, such as intravenous tPA, should be initiated within three hours of the onset of symptoms.
- If the stroke is the result of a cerebral hemorrhage, physicians will immediately take measures to reduce blood pressure of hypertensive patients in order to minimize flow of blood from the ruptured artery.
- Long-term therapy following a stroke may include antiplatelet medications, such as aspirin, or blood thinners, such as warfarin, to prevent future clots.
- Special railings, braces, canes, wheelchairs, or other devices may be necessary to help increase mobility for those with partial paralysis.
- Physical, speech, occupational, and emotional therapy helps patients and their families cope.
- Those with extensive disabilities may need a period of in-hospital rehabilitation or professional in-home medical care.

WHEN TO CALL A DOCTOR

• EMERGENCY Call an ambulance immediately if you or someone in your presence exhibits stroke symptoms.

The Encyclopedia of Heart and Heart Disease Second Edition

326 stroke

Ischemic stroke Ischemic stroke, also called cerebral infarction, results when there is an obstruction within an artery that cuts the flow of blood, and hence the oxygen supply, to a portion of the brain. When deprived of oxygen for much longer than four to six minutes, brain cells die and the brain cannot replace them. The majority of ischemic strokes result from atherosclerosis in which fragments of arterial plaque (deposits of fatty acids and other substances that accumulate along the inside walls of the arteries) break away and travel through the bloodstream until they can no longer pass through an artery and they become lodged. They block the flow of blood beyond the point of occlusion. The extent of damage depends on the location of the occlusion and the amount of brain tissue the blocked vessel ordinarily serves. When the blood supplies a large portion of the brain, the damage can be substantial or even fatal.

Hemorrhagic stroke Hemorrhagic stroke, sometimes called intracerebral hemorrhage, occurs when an arterial wall dissects (splits apart) within the brain and allows blood to leak into an area of brain tissue. Hemorrhagic stroke has the effect of flooding brain cells, literally drowning them. About 12 percent of strokes are hemorrhagic; 40 percent of hemorrhagic strokes are fatal. In addition to the other warning signs of stroke, sudden and severe headache, often accompanied by nausea and vomiting, is a common symptom of hemorrhagic stroke and indicates increasing intracranial pressure (pressure within the skull). However, generally it is not possible to tell from a person's symptoms whether a stroke is ischemic or hemorrhagic.

Hypertension and stroke Hypertension (high blood pressure) is the most common cause of stroke, particularly when it coexists with atherosclerotic disease and DIABETES. As blood flows through the arteries the atherosclerotic accumulations generate turbulence that causes the blood to swirl and pool. Pooling encourages clots to develop. As well, the turbulence chips away at the atheroma, causing it to erode. The fragments float through the bloodstream until they no longer can pass through a blood vessel. Phagocytes, specialized "cleaner" blood cells, attack and consume the fragments. The larger the fragment the longer this

process takes, and the more likely there will be damage to the cells deprived of blood because of the vessel's occlusion. In the arterioles, the body's tiniest arteries, this damage generally is minimal and the surrounding cells can compensate for cells that are lost. When these arterioles are in the brain, the small occlusions can cause transient ischemic attacks (TIAs), sometimes called mini or micro strokes, that produce short-term symptoms. Small occlusions can occur without causing symptoms as well, and are called silent cerebral infarctions or silent strokes; though without symptoms, the damage to the brain can become significant over time. In larger arteries occlusions can have disastrous consequences.

Hypertension also sets the stage for hemorrhagic stroke, with the increased pressure against the walls of the arteries causing tissue deterioration and loss of elasticity. This lessens the artery's ability to withstand the continual pulsating bursts of pressure against its walls, and the layers of the artery's walls can begin to separate or can outright rupture. The larger the artery in which this occurs, the more rapid and serious the damage, though even small arteries can release significant amounts of blood before the body's clotting mechanisms activate to slow and stop the blood flow. Maintaining control of blood pressure through medications and lifestyle helps to minimize the risk of stroke, though having hypertension is a major risk factor for stroke.

Symptoms and Diagnostic Path

Warning signs announce that most strokes are taking place, though often people do not recognize or acknowledge them until the stroke is well under way. It is important to know and respond to the symptoms of stroke, which include any sudden:

- weakness or numbness, especially on just one side of the body
- loss of balance or "stagger" when walking
- difficulty speaking or understanding what others are saying
- blurred or double vision
- severe headache, especially when accompanied by nausea and vomiting

It is crucial to seek emergency medical attention at the first indication that a stroke might be occurring. Not all strokes display all the warning signs.

Treatment Options and Outlook

Early intervention and treatment are essential to minimize the damage and consequences of stroke. Detection and treatment with thrombolytic medications within several hours of the onset of an ischemic stroke can restore circulation to the brain before permanent damage occurs.

The most effective treatment for most ischemic strokes is early intervention with THROMBOLYTIC MEDICATIONS ("clot busters") that, when injected into the bloodstream, act immediately to dissolve the clot. This relieves the occlusion and restores blood flow, typically within seconds to minutes. Such medications include STREPTOKINASE and TIS-SUE PLASMINOGEN ACTIVATOR (TPA), which must be administered within three hours of the onset of the stroke to be effective. Beyond this window of time, the clot is firmly established and thrombolytic medications are ineffective in dissolving it.

Thrombolytic medications are not helpful in hemorrhagic stroke and in fact can worsen bleeding as they interfere with the clotting process. It is essential for doctors to determine whether a stroke is hemorrhagic or ischemic before administering thrombolytic medications. The imaging procedure COMPUTED TOMOGRAPHY (CT) SCAN is highly effective for this purpose. Treatment for hemorrhagic stroke depends on the extent of the bleeding and whether there is a dangerous increase in intracranial pressure. When the latter occurs, doctors may choose surgical intervention to attempt to drain the collecting blood to relieve pressure. Medications to reduce the brain's fluid levels also may be used for this purpose. Often, treatment is supportive while the body attempts to contain and absorb the hemorrhage.

Rehabilitation can be prolonged even when damage from the stroke seems moderate. Some areas of the brain can learn to take over functions from damaged parts of the brain, while other losses such as speech are more difficult to replace or accommodate. With diligent effort and a guided rehabilitation program, about 60 percent of people who experience strokes can return to productive lives. However, recovery can take time; 20 to 30 percent of people still require institutional care (skilled nursing facility or long-term care facility) three months after their strokes. About 30 percent have permanent disabilities as a result of their strokes.

Risk Factors and Preventive Measures

Stroke can strike anyone at any age. However, certain circumstances increase the risk for stroke. They include:

- hypertension
- cigarette smoking
- · other heart disease, particularly ATHEROSCLERO-SIS, CORONARY ARTERY DISEASE (CAD), PERIPHERAL VASCULAR DISEASE (PVD), and CAROTID STENOSIS (carotid artery disease)
- · physical inactivity
- age
- DIABETES
- · kidney disease
- · family history of stroke
- previous stroke, TIAs, or HEART ATTACK
- African-American heritage
- ATRIAL FIBRILLATION

Some risk factors, such as age and race, cannot be changed. This makes it all the more important to mitigate lifestyle risk factors by maintaining a healthy weight, getting daily physical exercise, eating a nutritious diet, and keeping other health conditions (especially diabetes and hypertension) under tight control.

See also African Americans and Cardiovas-CULAR DISEASE; AMERICANS WITH DISABILITIES ACT (ADA); DIABETES AND HEART DISEASE; LIFESTYLE AND HEART HEALTH; QUALITY OF LIFE; SMOKING AND HEART DISEASE; TRANSIENT ISCHEMIC ATTACK (TIA).

stroke volume The amount of BLOOD the HEART pumps to the body with each contraction. Stroke volume correlates to AEROBIC CAPACITY; the higher one's level of aerobic capacity the greater the stroke

Case 4:21-cv-00122-MWB-MP Document 28 Filed 11/15/21 Page 74 of 75

Stroke

In the United States, **stroke** is the fifth-leading cause of death and a leading cause of adult disability.

A stroke is a "brain attack" — it occurs when the blood supply to a part of your brain is interrupted or severely reduced, depriving brain tissue of oxygen and nutrients. Almost 2 million brain cells die each minute during a typical stroke. So, as the American Heart Association emphasizes, "With a stroke, time lost is brain lost."

A stroke is a medical emergency, and prompt treatment is crucial. Early treatment can minimize damage to your brain and reduce your risk of complications.

Warning signs

To help yourself or someone else, the American Stroke Association, American Heart Association and others urge you to recognize stroke by thinking FAST.

- Face. Ask the person to smile. Does one side of the face droop?
- Arms. Ask the person to raise both arms. Does one arm drift downward? Or is the person unable to lift one arm?
- Speech. Ask the person to repeat a simple phrase. Is his or her speech slurred or strange?
- Time. If you observe any of these signs, call 911 or emergency medical help immediately.

Tell the 911 operator or emergency medical personnel that you think it's a stroke. If you're calling for another person, watch the person closely while waiting for an ambulance. Don't let the person eat or drink anything. If needed, take these actions:

- If the person stops breathing, begin CPR (see pages 2-3).
- If vomiting occurs, turn the person's head to the side. This can prevent choking.

Types of stroke

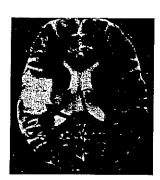
There are two main types of stroke:

- Ischemic (is-KEE-mik). Most strokes are ischemic strokes. They're caused by the buildup of fatty deposits called plaques. Growth of plaques can suddenly interrupt blood flow to the brain by blocking an artery. Or sometimes a clot breaks loose, blocking blood flow to the brain.
- Hemorrhagic (hem-uh-RAJ-ik). This type of stroke occurs when a blood vessel in your brain leaks or ruptures, causing bleeding in the brain. The most common cause of a hemorrhagic stroke is high blood pressure (hypertension), but it can also be caused by weak spots in your blood vessel walls (aneurysms) that develop with advancing age. Some aneurysms may form as a result of genetics. A less common cause of hemorrhage is the rupture of an arteriovenous malformation (AVM) an abnormal tangle of thin-walled blood vessels, present at birth.

Although less common than ischemic strokes are, hemorrhagic strokes have a higher risk of death. Strokes in young adults are more likely to be hemorrhagic.

What's a TIA?

A transient ischemic attack (**TIA**), sometimes called a ministroke, is a temporary interruption of blood flow to part of your brain. TIA symptoms are similar to those of a stroke but resolve quickly, often within minutes. A TIA doesn't destroy brain cells or cause permanent disability, but each TIA increases your risk of stroke. If you think you've had a TIA, call your doctor. After a TIA, the risk of a stroke



The arrow reveals an area of brain tissue damaged by a stroke, as shown on a magnetic resonance imaging (MRI) scan.



increases immediately and may be as high as 20 percent over the next three months. Depending on the cause, you may need medication to prevent blood clots or a procedure to remove fatty buildup in your arteries.

Stroke treatment

The success of treatment is often related to how soon medical care is given. Treatment depends on the type of stroke. After treatment, you may also be given preventive medications to reduce your risk of having another TIA or stroke.

- Ischemic. Therapy with clot busting drugs must start within three hours. You may be given aspirin in the emergency department, but don't take it before medical help arrives because aspirin can worsen a hemorrhagic stroke. Some people benefit from an injection of tissue plasminogen activator (TPA), but it does carry some risks. Your doctor may recommend clot removal surgery or other procedures to widen the inside of an artery leading to your brain.
- Hemorrhagic. Surgery may be used to treat a hemorrhagic stroke or prevent another one. The most common procedures — aneurysm clipping and arteriovenous malformation (AVM) removal — carry some risks. Your doctor may recommend one of these procedures if you're at high risk of spontaneous aneurysm or AVM rupture.

Can you prevent a stroke?

To help prevent a stroke or TIA, know your risk factors and take steps to adopt a healthy lifestyle:

- Prevent or control high blood pressure. High blood pressure significantly increases your risk of stroke. (See "High blood pressure," page 182.)
- Don't smoke. Smoking greatly increases your risk of stroke.
- Lower your intake of cholesterol and fats. Eating less cholesterol and fats, especially saturated and trans fats, may reduce the plaques in your arteries. If dietary changes aren't enough, your doctor may prescribe a cholesterol-lowering drug.
- Maintain a healthy weight. Being overweight contributes to other risk factors for stroke, such as high blood pressure, heart disease and diabetes.
- Prevent or manage diabetes. Having diabetes significantly increases your risk of stroke. (See "Diabetes," page 172.)
- Get regular physical activity. Physical activity and exercise lower your blood pressure and improve the overall health of your blood vessels and heart.
- Drink alcohol in moderation, if at all. Heavy alcohol consumption or binge drinking increases your risk of high blood pressure and stroke.

Risk factors beyond your control

While there are risk factors for stroke that you can't control, knowing that you're at higher than average risk can be beneficial. It highlights the importance of living a healthy lifestyle to reduce your risk.

- Family history. Your risk is greater if one of your parents, a brother or a sister has had a stroke or TIA. It's not clear whether the increased risk is inherited or due to family lifestyles.
- Age. Your risk of stroke increases as you age.
- Sex. More women than men die of stroke each year, in part because women are generally older than men when they have their strokes. But research continues about possible differences in medical care.
- Race. Black people have a higher incidence of stroke than white people do. The increase may be partly due to a higher incidence of high blood pressure and diabetes in that population.